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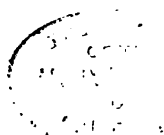
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ELECTRIC RAILWAY AUDITING AND ACCOUNTING

BY

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PREFACE.

The methods of accounting described in the following pages are not those in use by any particular electric railway, but an attempt has been made to group some of the best ideas gleaned from many sources, and to combine them in a harmonious whole.

The accounting requirements of interurban railways engaged in local and interline business have been carefully considered, and some special features of city railway accounting are explained.

The three essentials of any good system of accounting are clarity, accuracy and comparative economy. It has been our endeavor to eliminate from the methods outlined, those which tend to sacrifice these valuable features.

The forms illustrated are reproductions of ones actually used by electric railways with the exception that company names are omitted.

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Electric Railway Auditing and Accounting

CHAPTER I.

INTRODUCTORY.

In the early days of street railroading the bookkeeping was quite simple in character, and frequently not of sufficient importance to require the services of a trained accountant. As time went on, consolidations of existing lines were effected, and the motive power changed to electricity. The change in speed, resulting from the substitution of electrical power, enabled the railway to draw its patronage from wider territory, and the opening years of the twentieth century find the electric railway entering a vast field of usefulness.

The lines in cities have been greatly improved, and with the construction of subway and elevated roads, express trains of high speed whirl the suburban resident to his city office in a very few minutes. This has encouraged the development of suburban tracts for home purposes, and as the possibilities became evident, the next steps undertaken were the construction of cross-country trolleys traversing the highways, and then the long-distance, high-speed interurbans operating upon private right-of-way.

Interurban lines have adopted many of the operating features of the steam railway, chief of which may be mentioned the sale of tickets, the establishment of stations and the handling of freight, express and baggage. Some lines have progressed further in the procurement of business, selling through tickets to passengers traveling long distances over connecting lines, and accepting freight for transportation in like manner.

This development has brought many problems to the accountants, and in the following chapters the writer has outlined the manner in which some of these problems have been met by the

accounting officers of American railways. It has been necessary, in order to make a connected narrative, to indulge in occasional repetition and to describe at length some features quite familiar to experienced accountants.

At first a large part of the records, pay-rolls and statistics were made up in the operating departments of the railways. There was little uniformity in the methods used, and the statistical results secured were sometimes almost valueless. The development of large railway systems showed the value of skilled accountants to direct the work of preparing accurate and uniform records, and accounts. Now every road of any size has its accounting officer, who may be designated as Comptroller, General Auditor, Auditor, or by some other title. The title Auditor is used more frequently than any other, and for that reason it is the one mentioned in the succeeding chapters.

In closing this brief introductory, the writer wishes to express his appreciation of the assistance rendered by the accounting officers of several electric railways, who very kindly furnished some of the descriptions of accounting methods and samples of forms that appear in this volume.

CHAPTER II.

CONSTRUCTION ACCOUNTS.

The auditor's services in connection with the construction and operation of an electric railway may begin very early in the infancy of the project—in fact, the earlier the better.

If preliminary surveying has been completed and the route decided upon, which is frequently the case when the auditor is called upon to take charge, he should be furnished with a detailed statement of the amount already expended for organization, engineering and other purposes.

With this as a basis, it will be his duty to inaugurate a system of accounts and vouchers that will enable him to keep an accurate check upon expenditures. In addition thereto, the system should be so planned that the auditor may furnish his board of directors, from time to time, with a concise summary of the construction work completed and in process of completion.

In order to secure the best results, and avoid misdirected effort, the auditor should obtain a general outline of the information that will be expected, before planning his system of accounts. It is possible that his directors may wish to know the cost of certain bridges, sidings or buildings. It is much more satisfactory to provide special accounts for these jobs in advance than to try to explain, after the work is completed, why the information cannot be furnished. If the various units of cost required are set beforehand, the auditor may direct his forces accordingly.

Labor and material will be purchased in large quantities and used in a great variety of construction work. If all trackmen's wages are charged to a blanket account called Track and Roadway Construction, and all building material to Buildings account, without being separated into job costs, it will be utterly impossible to furnish the management with accurate costs in detail.

In planning any classification of accounts the auditor will

necessarily be guided by the restrictions that may have been placed by legislative act upon the manner of accounting.

The Street Railway Accountants' Association of America prepared a system of classifying construction and equipment expenditures which has since been used by a large number of electric railways. The titles of the accounts used in this classification follow:

- A. Organization.
- B. Engineering and Superintendence.
- C. Right of Way.
- D. Track and Roadway Construction.
- E. Electric Line Construction.
- F. Real Estate Used in Operation of Road.
- G. Buildings and Fixtures used in Operation of Road.
- H. Investment Real Estate.
- I. Power Plant Equipment.
- J. Shop Tools and Machinery.
- K. Cars.
- L. Electric Equipment of Cars.
- M. Miscellaneous Equipment.
- N. Interest and Discount.
- O. Miscellaneous.

It will be noted that, in a measure, the arrangement of accounts is an index to the manner in which the construction work progresses, the first step being the organization of the company and its consequent expenditures for incorporation fees, etc.

Local conditions require that different subdivisions of the accounts included in this classification shall be used. It is generally found advisable to keep separate accounts for such large items as wire, poles, insulating material, etc., under the heading Electric Line Construction, and to subdivide most of the general accounts in this manner. These sub-accounts are usually designated by number suffixes in addition to the letter, in order that the full titles of the accounts may be abbreviated.

For example, the account including the cost of poles for electric line construction may be known as account E-5, while insulating material and wire are designated respectively, as, E-6 and E-7.

Some companies use dozens of these subdividing accounts, while others are content with very little detail.

If special account is to be kept of the cost of a certain piece of track, line or other work, it may be given a distinguishing number. If, for illustration, the number 300 were given to the account charged with the construction of a loop at Summer Park, the line work on that particular job would be abbreviated as E-300, and if it were desired to know the cost of the insulating material used on the loop, the labor and material used in the insulation would be charged to an account abbreviated E-300-6, or what is positively a better arrangement, 300-E 6.

No matter how much or in what form the accounts are subdivided, a harmonious plan of grouping is to be kept in mind. Although the segregation is carried so far that some of the accounts seem to be a very small part of the construction cost, they merge uniformly into the general accounts. It will be necessary to make statements that show in graphic form, the aggregated costs of construction, and the accounts should be arranged so that they serve a double purpose. Controlling accounts which contain the totals of a few broad classes of construction, will be referred to in the preparation of condensed statements; the detail contained in the numerous subsidiary accounts will be made the basis of separate reports for the officials most interested in the construction of the property.

When the plan of accounting is agreed upon, the auditor issues instructions to the head of each department that is using labor or material in construction work. These instructions should be clear and concise, describing the classification of accounts that is used, and outlining the system to be followed in the approval of bills.

No bill is passed by the auditor for payment unless it is approved by the constructing engineer or other officials delegated with this authority. If it is not considered advisable to have construction officials indicate the particular account to be charged with the expenditure, an explanation sufficient to enable the auditor's staff to make distribution to the proper accounts, should accompany or be noted upon the invoice. Pay-roll forms are printed so that the distribution of the employees' time may be entered upon the side or back of each sheet, unless shown on a separate form attached to the rolls.

Men busy "getting things done" out on the line do not always appreciate the importance of these things, but they willingly coöperate with the accountant when attention is directed to the necessity of following some definite plan.

Construction forces are frequently working a considerable distance from the general offices, and the engineer in charge may find it advantageous to carry a force of clerks with him and advance his office headquarters as the work progresses.

In order that his operations shall not be hindered by petty delays, he is furnished a sum of money with which to make small purchases in emergencies. A round sum is usually advanced by the treasurer, and charged against the engineer as a fund held in trust. At periodic intervals the engineer makes up a list of the expenditures he has made, showing vouchers or receipts for each item, and is reimbursed the total amount expended. This keeps the fund at its original figure, and the entire amount is returned by the engineer when no longer needed.

The large purchases of construction material are made at the general offices by one of the officers whose duties and authority are clearly defined. In order to secure the lower prices obtainable by purchasing supplies in large quantities, and to take advantage of rising markets, material is frequently bought some time in advance of requirements, and stored in buildings and yards at convenient locations, to be checked out as needed. Storing protects the material from theft and the weather, and also prevents waste to a certain extent. A report of material taken out of each yard or store-room is furnished the auditor at the end of the month or at shorter intervals. The amount used in construction is then transferred from the suspense (stores) account where it has rested, to the construction accounts in detail.

Whenever material is purchased in an emergency, outside of the usual routine, the employe incurring the indebtedness for the company, should be required to report it to the general offices on a special blank used for the purpose. These blanks may be bound, in pocket size for convenience, and consecutively numbered so that all must be accounted for as used or spoiled. They are printed in triplicate, two being perforated for detaching, and one to remain permanently bound in the book.

One of the copies of this "purchase order" is given to the person who sold and delivered the material. This is the seller's receipt and is to be attached to the bill when rendered. The other detached copy is sent to the auditor or purchasing agent as may be decided upon. The form should show the names of employe purchasing, and the seller, date, job for which used, the emergency requiring the purchase, and other details required by local conditions. A modification of this form may be used as an acknowledgment of the delivery of construction material regularly purchased, so that the officials authorized to approve invoices may have on record the signatures of the employes who actually received the material.

In designing blanks to be printed for various purposes, the auditor will find it advisable to adhere to a few standard shapes and sizes that may be economically cut from full sheets. For the sake of uniformity, the type used in printing should be confined to one or two fonts of pleasing appearance, but clear-cut and distinct. It will be found an advantage, in printing forms to be used only in inter-departmental accounting, to have the title of the form appear prominently, while the name of the railway may be quite inconspicuous.

The auditor's work will be simplified if the railway does not build the line with its own force, but lets contracts for all or part of the work. If the company utilizes a financial plan embracing the services of a construction company which accepts pay for its services in bonds and stock, the auditor may not be required to install a complete system of blanks and forms during the construction period. His work will consist of opening the general books and transcribing the entries thereon as reports are received from the construction company. His efforts should be directed towards securing the proper amount of detail, in order that future directors and stockholders may be provided with a complete history of the railway from its inception.

CHAPTER III.

LEDGERS, POSTING MEDIUMS AND THE BALANCE SHEET.

The accountant who is connected with the property in its early life has considerable influence in determining the kind of books that shall thereafter be kept. Changes of existing methods frequently cause friction and for that reason, established systems are not disturbed if found fairly well adapted to the requirements of the period.

The general (sometimes called the "private") ledger is indispensable. It is the key to the volume of fiscal transactions engaged in by railways; upon its pages are marshalled the regiments of figures that tell the company's history.

Formerly the transactions of almost every nature were transcribed in the book called the journal, and from thence laboriously and carefully posted to the ledger. The modern tendency to shorten work as much as possible without the sacrifice of clarity or accuracy, has resulted in the journal being used only for the entry of transactions outside of the usual routine or of a class not numerically prominent. Sometimes the journal book is dispensed with altogether, postings being made directly to the ledger from the posting slips called journal vouchers.

Journal vouchers are used for a double purpose. The approval of one or more officers is secured for the entry by the use of a voucher, and the memoranda or papers descriptive of the transaction thereby recorded, are attached to it for future reference. The vouchers are filed in suitable cases and as they are given numbers which are used in posting to ledgers, the process of posting and future investigation are both facilitated. The voucher itself need be but a simple form, provided with ample space for writing the names of the accounts debited and credited, description of or reason for the entry, and space for signatures of the officials approving.

The cash-book and journal are sometimes combined in a single book called the cash-journal, but if journal vouchers and a cash-book only are used, the work is lessened somewhat.

The cash-book, as its name indicates, is used for recording the transactions in cash. It may, for convenience, be ruled on the debit side with as many columns as there are classes of receipts, such as Passengers, Baggage, Mail, Accounts Receivable, etc., and one or more additional columns for sundry unattached items. The credit side may likewise be arranged in columnar fashion, with provision for vouchers, pay-rolls and other grouped payments. When vouchers are disbursed through several channels, a voucher cash column may be set aside for each bank through which payments are made.

It is quite desirable that the general ledger accounts be confined to the relatively important ones which are contained in the balance sheet; a statement of the debit and credit balances of the controlling accounts may then be taken at any time without having to look through the mass of detail of which they are composed.

Particular care is given to the arrangement of the accounts in the general ledger, in order that a balance sheet and statement of the income account may be prepared with little labor.

After a trial balance—which is merely a statement of the debit or credit balances as they appear in the ledger accounts at a given date—is taken, a balance sheet must be made up in order that the financial condition and result of operation may be clearly presented.

The general balance sheet is a statement of the balances in the open ledger accounts, grouped to show their relative value. The balances in accounts representing assets are shown first, on the debit side of the sheet, followed by the credit balances representing liabilities. This practice is generally followed in America and Continental Europe, but the English accountant reverses this order, placing liabilities first or on the left side.

A large number of American electric railways use the following general plan of grouping the accounts in the balance sheet:

Assets:

Road and equipment.

Investments.

Current assets.

Sinking funds.

Deficit.

Liabilities:

Capital liabilities.

Funded debt and mortgages on real property.

Current liabilities.

Accrued liabilities.

Surplus.

The accounts affecting income are not shown separately, but the net result appears as a debit or credit item. Frequently the current year's income result is shown separated from the balance derived from previous year's operation, commonly known as the Profit and Loss (or surplus) account. As each year is closed, the resulting balance of Income Account is transferred to the profit and loss account which thus becomes a condensed summary of the income account for a period of years.

The balance sheet's value is enhanced if it is made up in comparative form, the increases or decreases over previous periods indicating to the management the changes of values as they occur.

In order that the balance sheet may be a true statement of conditions, there must be a continual weeding out process for separating the "sheep from the goats." The accounts receivable must be examined periodically, for the purpose of closing out accounts not collectable. Investments, prepaid accounts, and suspense accounts are some of the others that require careful attention, in order that fictitious figures may not creep into the balance sheet.

The general ledger, while it is complete in itself, does not contain all the detail accounts pertaining to operation of the railway. The total of the balances in each group of the inferior accounts appear as a controlling account in the general ledger, the separate accounts being carried in subsidiary ledgers.

A subsidiary ledger may be used for each class of accounts. For example, one ledger may contain the Accounts Receivable, others Operating Expenses, Construction and Equipment, Suspense Accounts, and so on. The postings to these subsidiary ledgers are made daily, from the various posting mediums, and entries are posted to the general ledger accounts at longer intervals.

Thus, if we have a column on the debit side of the cash-book,

headed accounts receivable, the credits to the various accounts in the accounts receivable ledger will be posted daily; at the end of the month or other period, the total of the cash-book column is entered in the general ledger account "accounts receivable."

A similar plan is followed in posting from disbursement vouchers and collection vouchers which are previously entered in books designated, respectively, as disbursement voucher register and collection voucher register.

Collection vouchers are not always used by electric railways, but quite an advantage is secured by their adoption. The collection voucher is but another name for an audited bill against some individual or company for services rendered or material furnished by the railway. An ordinary bill-head is printed, with space at the bottom for approval of officials, and for the treasurer's receipt when paid.

These vouchers are numbered consecutively as entered in the register, which is a book ruled with columns for the classes of accounts credited with the amounts charged through the vouchers. For example, John Smith may be charged a certain sum for power furnished, or The Northside Railway for a half dozen poles. The latter item would probably be credited to an account not included in one of the groups ordinarily credited through collection vouchers. One or more columns of the register take care of these sundry credits. When collection vouchers are used, it is not necessary to make journal entries for transactions of this kind, which is a point in their favor.

The uses of the principal books of account that are mentioned in the foregoing paragraphs will be better understood by reference to the following arrangement:

| | | |
|-----------------------|---|---|
| Subsidiary Ledgers | { | Contain detail, posted from |
| | | Journal vouchers |
| | | Collection vouchers |
| | | Disbursement vouchers |
| | | Cash-book, etc. |
| General Ledger | { | Contains columnar-totals and sundry unat- |
| | | tached entries, posted from |
| | | Journal vouchers (or journal) |
| | | Collection voucher register |
| | | Disbursement voucher register |
| | | Cash-book etc. |

Postings to the numerous accounts carried in the Operating Expense Ledger and other subsidiary ledgers are made from vouchers and from the daily entries in the cash-book. At periodical intervals, usually at the end of the month, the totals of the columns in cash book and voucher registers are posted directly to the general ledger accounts. Unattached items entered in the "sundries" columns are posted to the general ledger separately as they appear.

If a journal book or a summarizing sheet is not used for grouping journal voucher items in columnar fashion, it will be necessary to make postings twice from the journal vouchers containing entries affecting subsidiary ledgers.

After postings have been made, the total debits and credits posted to the accounts in a subsidiary ledger during the month or other period under consideration, should equal the total amount that has been posted to the controlling account in the general ledger. Thus, the total postings to the accounts in the operating expenses ledger during a month should equal the amount posted to the controlling account "Operating Expenses" in the general ledger during the same period.

There are other ledgers and posting mediums used as the circumstances may require, but the same general practice is followed, of having the general ledger contain the controlling accounts, confining the detail to other books.

Mileage records, car-hour records, tonnage records, earnings records, agents' ledgers and conductors' ledgers, all have their proper places in the scheme of electric railway accounting and the compilation of statistics. The uses of some of them will be explained in other chapters.

CHAPTER IV.

THE INCOME ACCOUNT.

The most important part of a railway financial report is the income account. If it is presented in detail, accompanied by a balance-sheet that reflects conditions as they actually exist, interested investors and stockholders can keep in close touch with the operation of the road, although they may never see the physical property.

In making public reports, railways observe a certain amount of uniformity, which is of valuable assistance to persons who wish to compare the operations of different properties.

The steam railways follow a form which has been prescribed by the Interstate Commerce Commission after consultation with experienced railway accountants, many of whom are associated under the title "American Association of Railway Accounting Officers." The electric railways have used to a large extent the standard form of report formulated and recommended by the American Street and Interurban Railway Accountants' Association, successor to the Street Railway Accountants' Association of America.

The income account, as stated in published reports, starts with the gross earnings, or "operating revenue," classified in detail. From the gross earnings is deducted the total operating expenses, also classified under several headings. Other items are added and deducted until the net income (or deficit) is indicated for the period under consideration.

If dividends are declared, the amount is separately shown as an additional deduction. Sometimes other amounts, covering appropriations or expenditures for improvements to property, are deducted before the final surplus is shown.

The following income account of an imaginary electric railway illustrates one form in which figures appear in monthly statements. The details of earnings and expenses are shown in statements that are supplemental to the general report of totals.

| | |
|---|----------------|
| Gross earnings from operation..... | \$1,000,000.00 |
| Operating expenses..... | 600,000.00 |
| <hr/> | |
| Net earnings from operation..... | \$400,000.00 |
| Miscellaneous income..... | 50,000.00 |
| <hr/> | |
| Gross income less operating expenses..... | \$450,000.00 |
| Deductions from Income: | |
| Taxes..... | \$ 30,000.00 |
| Bond interest..... | 300,000.00 |
| Other fixed charges..... | 50,000.00 |
| <hr/> | |
| | 380,000.00 |
| <hr/> | |
| Net income..... | 70,000.00 |
| Deductions from Net Income: | |
| Dividends..... | 25,000.00 |
| <hr/> | |
| Surplus for year..... | \$45,000.00 |

The figures are valued chiefly for comparison with previous ones; in order to enhance their value, the reports of operation usually include statements of results during like periods in former years.

Monthly statements are prepared with four parallel columns of figures. The first two columns are used for showing the result of operation during the current month and the same month of the preceding year. The third and fourth columns are employed for the purpose of comparing the expired portion of the current fiscal year with the similar period of the previous year.

In the foregoing statement of the income account it will be noted that the first three items are those which show the result of operation of the physical railroad property, apart from any transactions that may have resulted from the policy of the corporation in the conduct of its financial and other interests not directly connected with the operation of the railroad.

One of the chief advantages derived from this method of grouping the figures, is the exhibition of operating efficiency. The operating staff is judged to a certain extent by the figures shown in these first items.

While this is true, the statement should be qualified. For

example, another road may show the same gross earnings as given in the foregoing figures, but because of its location the operating expenses may be ten per cent. higher, with a corresponding decrease in net earnings.

There are so many factors, such as the state of efficiency in which the road is maintained, the rentals of tracks, terminals and buildings not owned, and other conditions which influence net results, that judgment can not be rendered offhand. In order to fully understand the results shown and to make intelligent comparisons, a knowledge must be had of each road's strategic position, the condition of its property and the nature of the country traversed. In addition, the detail figures of which the income account and the balance sheet are made up, should be carefully studied.

The accountant is required to use great care in order that the figures presented may be truly indicative of actual results during the period under consideration.

Revenue or Earnings bears some relation to Cash Receipts, but the distinction between them is always to be kept in mind. If it were possible to make statements of earnings by copying the cash book entries, the auditor's work would be simplified, but there are various reasons why this is impossible.

If the conditions were such that no tickets were sold, no credit extended and no payments received in advance, the cash receipts might be synonymous with earnings; usually numerous entries are required to reconcile the cash with actual earnings.

The item of passenger earnings is made up, in large part, of cash and tickets collected by conductors. Some railways do not credit the cash received from the sale of any ticket, to earnings, until the ticket has actually been lifted by the conductor. As tickets are sold, the proceeds are credited to liability accounts having titles descriptive of the classes of tickets sold. When tickets are turned in by conductors, the values are computed, and journal entries are made, charging the ticket liability accounts, and crediting passenger earnings with the amounts. The balances in the ticket accounts show the amount of liability for outstanding tickets.

While this is theoretically correct, there are practical reasons why the plan is not always used. There is a vast amount of labor involved in the computation of values, particularly if the

line sells many thousands of different kinds of tickets each day.

The bulk of ordinary single-trip and round-trip tickets are used so soon that they may be considered earned when sold, the overlapping of one day's sales being offset by the previous day's sales earned.

The mileage and coupon books are usually taken into earnings only as the coupons are lifted by conductors. The books are sold for cash and frequently used during a period of several months, so that there is always a considerable liability for unused coupons. The coupons are valued as lifted, and the amount included in passenger earnings.

It is the custom of electric railways to prepare daily comparative statements of earnings, in order that managers and others may keep constantly informed of the volume of traffic.

This makes it necessary to do considerable work in the way of prorating interline earnings, and the computation of freight and express earnings.

The daily reports of sales that are made by agents, are used in prorating earnings over divisions and lines. If agents are instructed to make reports weekly or monthly only, there must be a daily statement in some form, of the total sales. This may be a brief memorandum of the items which make up the amount of cash remitted; all agents can not be entrusted to make the proper divisions of revenue, however.

If daily reports are received, the auditor makes divisions of revenue to the various lines and divisions. If the road is a large one, selling tickets good for transportation over several of its divisions, it will be necessary to prorate the amounts of inter-division tickets sold, upon a mileage or arbitrary basis. Interline tariffs show the amount of revenue due each road interested in this class of earnings, and after the agents' daily reports have been verified, the totals are prorated and the amount earned by the home line is carried into earnings.

The baggage earnings are usually included in the agents' reports of ticket sales or cash remittances. Interline collections are handled in a manner similar to ticket sales.

The amount earned upon interline tickets sold by foreign lines, routed over the home line, is computed by ascertaining the value of coupons lifted by conductors. These coupons of interline tickets are received daily in the auditor's office. The

reports of sales made by foreign lines are usually made but once a month and received some time after the close of the month. It is therefore impracticable to depend upon the reports for the daily computations of earnings. The same thing is usually true of interline baggage received from foreign lines, prepaid.

Freight and express earnings are compiled from the copies of way-bills that are received in the auditor's office, from station agents. Those that are purely "local," confined to one division, are quickly footed and the entire amount is taken into the earnings of that division.

The way-bills that cover freight moving on several divisions are grouped according to the division of revenue that is used. It is frequently the case that the same percentages are used for several different stations, and considerable labor is saved by gathering all the bills of one percentage in a group.

Interline freight earnings must of necessity be computed in a different manner. If the foreign line does not furnish an abstract or copy of all way-bills forwarded, the home agents should be instructed to furnish the auditor with a daily report or copy of all foreign way-bills received. This is necessary in order that the daily statements of earnings will include the proper proportion of revenue on all interline shipments handled. The interline way-bills forwarded are reported daily, also, by the home agents, or copies are sent to the auditor along with the copies of ordinary local way-billing. The amount of earnings is then ascertained by reference to the interline tariffs in effect.

The miscellaneous earnings, such as power sales, transportation of mail, advertising, etc., require a special method of treatment. If considered advisable, a prorata proportion of arbitrary monthly charges may be included in the daily statement of earnings. If power is sold upon the basis of consumption as recorded by meter, the charge will not be known in time to include it in the daily earnings statement. It may, therefore, be found necessary to omit this class of earnings from the statement, which will still be sufficiently complete to serve its purpose. The chartered car earnings may advantageously be shown separately in the daily statements; these earnings fluctuate so that the comparison may be misunderstood if the reasons for variations are not explained.

Certain classes of Operating Expenses are quite sensitive to variations in the volume of traffic, while others are in the nature of "fixed charges," little affected by changes in the schedule or the density of traffic.

The use of the voucher system is an aid to the proper distribution of charges. Bills are vouchered as of the month in which the material is used or the service rendered, regardless of the time that they are paid; as vouchers are drawn, the operating expense accounts are charged.

There are always some payments for material not used or service not rendered during the current month. Such are the bills for material placed in the storeroom stock, fuel, insurance, etc. In order that the correct proportions may be included in monthly statements, charges to operating expenses are made through intermediate accounts. Supplies are charged to stores accounts as received, and monthly reports are made up by storekeepers, showing the amounts chargeable to operating expenses and other accounts for material used. Insurance premiums paid in advance are considered as assets, and reduced by the monthly charges to operating expenses.

The charges such as taxes, bond interest and the like, which are paid after they have accrued for several months, are taken into account by journal entries charging the rateable proportion against each month's operation.

CHAPTER V.

AUDITING CONDUCTORS' COLLECTIONS.

Many and varied are the devices used by railroad managers to increase the percentage that "passenger receipts" bears to "fares collected," or fares of passengers carried.

In the old days of single-truck, "bobtail" cars hauled by horses and mules, it was customary to have a fare box fastened in the front of the car, in sight of the driver, who was master of all he surveyed, as far as that car was concerned. There were tubes running along the inside walls of the car and as the passengers' nickels were deposited therein, they rolled merrily into the fare box under the eagle eye of the driver. The driver made change for passengers, but further than that he handled none of the company's money.

Since that time numerous systems of collecting and registering fares have been put into operation.

The subway and elevated roads require passengers to pay before entering the cars, by using gates and ticket sellers and choppers, but this system can not be used to advantage by surface roads whose passengers board the cars at street crossings, stations and flag stops, indiscriminately.

An effort to secure somewhat similar results has been made by the street railway of Montreal, Canada, which was the first to use the so-called pay-as-you-enter car. This is a car having a large rear platform, capable of accommodating twenty-five or thirty persons at one time. The platform is divided by a railing which leads to two separate doors, one opening inward only and the other outward only. A conductor stands by the door of ingress, and demands the fare of each passenger before the car is entered. In this way he has no excuse for missing fares, and is also at his place to prevent accidents to persons getting on and off the car. Passengers may leave by the front door, which opens when a lever is thrown by the motorman.

For about twenty-five years the street railways of Toronto, Canada, have required conductors to collect fares with a port-

able fare box about the size and shape of a coffee-pot and sometimes so nicknamed. It is made of steel, leather covered and is provided with a handle, and a lock. The box is locked at the offices of the company and the key is retained there. At the top of the box or bank are two slots, one for coins and another for tickets. The conductor makes change, but the passenger is required to deposit his own fare in the box. The slots are provided with accurately balanced teeth which grip the coin or ticket as soon as it is inserted a fraction of an inch and it can not then be withdrawn, but must pass into the box. There are two compartments in the box, the upper one being provided with glass windows. The conductor glances at the fare to see that it is a good tender, then presses a button and it drops into the lower compartment, remaining there until the box is opened at the offices.

A fare collector which is somewhat different from the one used in Toronto is that used by street railways in some of our cities. This is a portable collector which grips the coin as it is inserted in the slot. The coin registers and rings a bell before passing through the slot and into the conductor's hand.

It has been the practice in some European countries to give each passenger a receipt when the fare is paid. Inspectors board the cars at intervals and request passengers to produce the receipts showing that they have paid the fare. This method provides a certain check upon conductors, as they are charged with the receipts they afterward issue to passengers. It is, however, rather annoying to passengers, and the expense for inspectors makes it inadvisable to check each car every trip. One of the street railways in Mexico used a modification of the receipt system, involving the use of a lottery. The receipts were numbered and participated in lottery drawings, held at intervals, thus making it an incentive for passengers to demand receipts for the fares paid.

Most city railways use a fare register fastened in one end of the car. The register provides for two separate registrations, one side being used for cash and the other for tickets, passes, etc. Sometimes two separate registers are used.

Some companies do not register transfers, while others have them rung up as tickets. If a positive method of securing

every cash collection could be used it would not be necessary to register transfers, but conductors are prone to trade them and to exchange transfers for nickels that don't reach the company's treasury.

When the conductor registers fares collected, the indicating numbers in the register advance, and sometimes a record is made upon paper contained therein. A statement of the register's commencing numbers for the day is on file in the company's office, for comparison with the closing numbers of the previous day. It is the duty of some employe to take these readings, which are then delivered to the auditor.

INTERURBAN CONDUCTOR'S REPORT.

Date 190

Town No.

Division

Conductor's No.

Conductor

Order No.

LEAVE THESE COLUMNS BLANK

| DUPLICATE TICKETS ISSUED | | | | | | | | | |
|--------------------------|--|--|--|--|--|--|--|--|--|
| No. off | | | | | | | | | |
| No. on | | | | | | | | | |
| No. off | | | | | | | | | |
| No. on | | | | | | | | | |
| TOTAL | | | | | | | | | |
| TRAIN CARRIES ISSUED | | | | | | | | | |
| No. off | | | | | | | | | |
| No. on | | | | | | | | | |
| TOTAL | | | | | | | | | |
| TICKETS LIFTED | | | | | | | | | |
| Card Single Trip, Local | | | | | | | | | |
| Card Single Trip, Lin. | | | | | | | | | |
| Card Round Trip, Local | | | | | | | | | |
| Card Round Trip, Lin. | | | | | | | | | |
| Book Tickets & Coupons | | | | | | | | | |
| Interchangeable | | | | | | | | | |
| Mileage Tickets | | | | | | | | | |
| Transfer | | | | | | | | | |
| TOTAL TICKETS LIFTED | | | | | | | | | |

PAISSES HONORED

Employee's Mileage

Complimentary Mileage

Employee Trip

Complimentary Trip

Limited Employee

Advertising

TOTAL

Value Registered Paise #

Total Trade Earnings #

TOTAL

Instructions: All tickets collected on trains and all sales of Duplicate Tickets and Train Checks issued, must be returned to Auditor in this envelope. Total cash received for tickets and train checks must be enclosed in Form and reported to acts. The balance of all other receipts must be enclosed in Form and reported to acts. This report must be made for each train run and deposited in safe at terminal.

Fig. 1.—Actual size 3 1/2" wide and 6 1/2" high.

At the end of the day the conductor places his cash collections in a canvas bag or stout envelope, if the " bag system " is used on that railroad, and deposits it in a safe or hands it to some designated person at the junction or home office. At the same time he deposits the tickets and transfers collected, which are also enclosed in an envelope (Fig. 1). The conductor lists on the outside of the envelope, the number of each kind of ticket, transfer or other form of transportation that is supposedly contained therein. If his cash and tickets are placed in separate envelopes, he will also make notation on the cash envelope of the amount contained in it, while if a canvas bag is used for money, he will fill out a deposit slip which is placed in the sack.

Some railroads have found the "bag system" objectionable because disputes arise regarding the amounts claimed to have been placed in envelopes and bags. Conductors' packages will be found not to contain the amounts listed, and when the matter is brought to their attention the men will insist that the figures shown are correct.

To overcome this difficulty, the use of "receivers" is favored by some roads. At carbarns or other places men are stationed whose duty it is to receive the conductors' returns as they quit work for the day. The cash and tickets are counted in the presence of the conductor and differences if found, are adjusted promptly.

After the cash reaches the office of the treasurer and has been counted, a report of the amount collected by each conductor is furnished the auditor. The tickets are also counted and a report or the envelopes themselves are furnished the auditor for use in making comparison of the actual returns, with the readings of the registers.

If transfers are issued by conductors instead of by transfer agents stationed at junction points, it will be necessary to audit a little more carefully, the transfers reported as fares. It is customary to use different colors for lines or divisions, and in some cases the transfers printed for each day have the date printed thereon in bold figures. The transfers are examined carefully to see that they have been punched by conductors passing the junction points where used, at approximately the time used. This may be done by a series of tests if the time limit has been punched in the transfer; the examination of perforations will indicate the punch used, thus identifying the conductor. The consecutive numbers of transfers are compared with the record of transfers issued to conductors issuing them. Further tests are made by comparing the number of transfers issued, with the number of cash fares reported by the conductor issuing them, on the same day; transfers enclosed in a conductor's trip envelope are examined to ascertain that they have been used during the designated time limit. These tests call for considerable work on the part of the auditor's clerks but the pulse of conditions may, to a certain extent, be felt by alternately testing the reports of conductors on different lines.

The use of fare registers is a characteristic of street railways that has been retained in the operation of many interurban properties. A fare register probably exercises the deterrent effect produced by a certain cash register, which was said to possess wonderful qualities for increasing the cash receipts of an American operating a restaurant in old Mexico. It was observed that each time the waiter brought his collection to the proprietor, a heavy blow was given the keyboard of the register, its big bell clanged sonorously and the coin was tossed into the money drawer. A friend of the restaurateur, a fellow countryman, noticed that the register was ancient and its recording mechanism was missing, and inquired what earthly reason there could be for keeping a machine so lacking in its essential features. The proprietor replied that he had suffered greatly from stealing of his waiters, but since he had bought this toothless watchdog, the waiters thought they were being watched by a remarkable American detective machine, and the restaurant receipts which found their way to his till had considerably increased.

A special type of register is used for interurban service, when the five cent zone system is outgrown. A register having a "bank" of a dozen different indicators is sometimes used for the purpose of registering ten different rates of fares, tickets and pass collections, and the issuance of cash fare receipts.

Cash fare receipts (Fig. 2) are used when there are more different rates of fare charged than there are indicators on the register. These are printed with the name of each station on the division where used, and with the varying amounts of fare to be collected. Conductors are required to punch out the names of the stations between which the passenger travels, also the amount of fare paid. They are printed in duplicate and after the two parts are punched simultaneously, they are separated at perforation; one part is given the passenger as his receipt, and one part called the audit stub, is retained by the conductor, and at the end of the day is sent to the auditor. A receipt having two audit stubs exactly alike is used when a crew operates a car over the tracks of its own and a connecting line. One of the stubs is then sent to the auditor of each of the railways, and is used in support of the statements showing amount of interline cash collections.

In order that conductors will be compelled to punch the two parts of the fare receipts identical, they are perforated and folded over by the printer before being clinched in pads of 50 or 100. The conductor is supposed to punch the two parts

| CENTRAL TRACTION CO. | | | | | | | | | | | | CENTRAL TRACTION CO. | | | | | | | | | | | |
|---|----|----|----|----|----|------|------|------|------|------|------|---|----|----|----|----|----|------|------|------|------|------|------|
| WEBSTER MARCUS DIVISION. | | | | | | | | | | | | WEBSTER MARCUS DIVISION. | | | | | | | | | | | |
| CASH FARE RECEIPT FOR FARE PAID | | | | | | | | | | | | AUDITOR'S STUB For fare paid from add to Stations punched. | | | | | | | | | | | |
| FROM AND TO STATIONS PUNCHED | | | | | | | | | | | | CONDUCTORS MUST TURN IN ALL STUBS OF TICKETS ISSUED FOR EACH TRAIN RUN. | | | | | | | | | | | |
| JOHN SMITH General Manager | | | | | | | | | | | | | | | | | | | | | | | |
| Retain this Receipt as evidence of Fare Paid. | | | | | | | | | | | | | | | | | | | | | | | |
| JAN. FROM TO | | | | | | | | | | | | JAN. FROM TO | | | | | | | | | | | |
| FEB. Webster | | | | | | | | | | | | FEB. Webster | | | | | | | | | | | |
| MAR. York | | | | | | | | | | | | MAR. York | | | | | | | | | | | |
| APR. Dale | | | | | | | | | | | | APR. Dale | | | | | | | | | | | |
| MAY. Chester | | | | | | | | | | | | MAY. Chester | | | | | | | | | | | |
| JUNE. Carnegie | | | | | | | | | | | | JUNE. Carnegie | | | | | | | | | | | |
| JULY. Dick | | | | | | | | | | | | JULY. Dick | | | | | | | | | | | |
| AUG. Loch | | | | | | | | | | | | AUG. Loch | | | | | | | | | | | |
| SEPT. Ingall | | | | | | | | | | | | SEPT. Ingall | | | | | | | | | | | |
| OCT. Floss | | | | | | | | | | | | OCT. Floss | | | | | | | | | | | |
| NOV. McCords | | | | | | | | | | | | NOV. McCords | | | | | | | | | | | |
| DEC. Oakland | | | | | | | | | | | | DEC. Oakland | | | | | | | | | | | |
| EXTRA FARE | | | | | | | | | | | | EXTRA FARE | | | | | | | | | | | |
| Howland | | | | | | | | | | | | Howland | | | | | | | | | | | |
| Marcus | | | | | | | | | | | | Marcus | | | | | | | | | | | |
| No. | | | | | | | | | | | | No. | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 29 | 30 | 31 | | | | | | | | | | 29 | 30 | 31 | | | | | | | | | |
| 70 | 75 | 80 | 85 | 90 | 95 | 1.00 | 1.05 | 1.10 | 1.15 | 1.20 | 1.25 | 70 | 75 | 80 | 85 | 90 | 95 | 1.00 | 1.05 | 1.10 | 1.15 | 1.20 | 1.25 |

FIG. 2.—Actual size 4" wide and 5" high.
Folded along dotted line.

exactly alike, with one punching through them both. In practice, however, a man sometimes punches the part given passenger for the full amount paid, say \$1.30 while the audit stub is punched \$1.05, the difference being pocketed. This manipulation has been

overcome to some extent by the use, on short lines, of a small metal container. The container is filled with fare receipts by the office issuing them, and after being locked is delivered to the conductor. It is made to fit the pocket and its patented feature is intended to prevent the conductor issuing the passenger a receipt which differs in amount from the audit stub.

Secret inspection has been found a necessary adjunct of mechanical safeguards. The simplest reports of inspectors usually consist of "on and off" records. The inspector or inspectors travel the full length of a conductor's trip and, unknown to him, keep accurate count of the passengers who get on and off at each stopping place. In order that these reports, when honestly prepared, may serve as an accurate check upon conductors, there must be a comprehensive system provided, which will automatically furnish the auditor with the same record of passengers "on and off" from the conductor's standpoint. The following plan is outlined, as a skeleton which may be filled in with details peculiar to different companies.

Each person who rides should give the conductor something for which he must account to the auditor. This may be cash, a ticket, trip pass, or coupon. If the somewhat cumbersome plan of issuing a receipt for each ticket and pass as well as cash fares is followed, the conductor's work will sometimes be increased beyond his power to handle it all properly.

Presuming that fare receipts are issued only for cash paid, conductors are instructed to write upon the back of each strip of coupons collected, the points between which the passenger traveled. If an employe presents a card pass he should be required to affix his signature to a slip filled in by the conductor, showing the zone through which he traveled, in addition to pass number. The fare receipt will be punched with the amount paid and names of stations for which the fare was paid. The tickets will, in themselves, show the zones covered by passengers using them and thus the record in this connection is complete.

The tickets, coupons, etc. for each trip are placed in a separate envelope by the conductor, and are received in the office of the auditor. If he is informed that an inspector has covered certain trips, the conductors' collections for those trips are tabulated, showing the number of passengers accounted for as having boarded and left the car at each station. These reports are compared with the inspectors' reports and if inspector and conductor

handle quickly, the return trip coupon is identified by having a band of dark or contrasting color printed across it. Each card ticket is numbered, and the same thing is true of every other form of ticket used in interurban service.

The travel is so light between some points that it is not worth while to have a stock of tickets printed with the names of these stations or stops. In place of card tickets, "book" tickets are used, so called because furnished to agents in pads or books of fifty or one hundred. The book ticket is printed on "safety" paper of some standard grade, and has the railway's name, and other data printed thereon. Blank lines are printed instead of station names, and the agent writes the name of his station and the destination, upon the ticket, before stamping with date. In all forms of book or coupon tickets, an "audit stub" is attached to the ticket as printed. This is filled in by the agent as the ticket is sold, and usually accompanies the report of ticket sales that he renders the auditor. It is quite important that these stubs be compared with the tickets as they are lifted by conductors, otherwise agents might sell tickets to one destination, reporting them as having been sold to another, lower-fare, station, pocketing the cash difference. The same style of ticket with different wording may be used to take care of special excursion and reduced rate sales, with a time limit specified. The date sold is stamped on the back, and the face of the ticket may provide for a — day limit, or be limited to "return not later than — (date)." The "going" coupon usually has a printed statement to the effect that it is not good if detached from the return portion.

The station dating stamp impresses the station name as well as the date, upon the back of the ticket, and this fact is used to advantage in printing tickets. Instead of a blank line being left on book or coupon tickets for name of the selling station, the words "station stamped on back" are printed in its stead. When the agent at Webster sells a ticket to Fairview he has but to write the word Fairview and stamp the ticket, which then reads "Good for one trip from station stamped on back to Fairview." It is necessary that he stamp both coupons of round-trip tickets, and the audit stub always.

A form of ticket that is popular with some interurban railways is the "tear" ticket, that is torn from the audit stub by

the agent (or conductor) selling. This ticket has an advantage over the ordinary book ticket, by reason of the audit stub peculiar to it. All the names of the stations on a division are printed in geographical (station) sequence down the ticket and its audit stub. The contract or other data is printed at the top of the ticket which reads "Good for one trip from the station stamped on the back to the station shown (in bold type) at the bottom of this ticket." Thus, when the agent tears the ticket from the stub, he does it so that the station at bottom will be the name of destination. The audit stub sent to the auditor is self-explanatory and as it can not be manipulated does not require such close comparison with the ticket lifted by conductor. If this form of ticket is used, agents at stations not terminals must be provided with two forms of tickets, having stations printed in reverse order for the different directions. If this were not done, the ticket could be manipulated as readily as any book ticket. x

When transportation is sold to a point which requires the passenger to travel over two or more divisions to reach his destination, coupon tickets are used in many instances. The tickets are in skeleton form (station names left blank) when furnished to agents, names being filled in as tickets are sold. One coupon is provided for each division traveled over. This arrangement gives the conductor a ticket for the passenger carried, and is easy to audit.

It is sometimes impracticable to sell coupon tickets and in these instances the use of a slip sometimes called "continuous train check" is found useful. This is issued by the conductor on the first division, who thereupon takes up the passenger's ticket. The check given passenger is punched with date, junction point, destination and other detail required and the number of the ticket taken up is written upon it. These checks are changed in form from time to time and are carefully audited to prevent irregularities. x

There are many other forms of local tickets used, such as mileage books, coupon books, commutation tickets, scholars' books, chartered car and corpse tickets, all of which have distinctive features, but do not present difficulties in the way of auditing.

The ordinary interline skeleton ticket is quite similar to the inter-division skeleton ticket heretofore described. A modi-

fication of the skeleton coupon ticket is the so-called multiple destination ticket. This form saves the station agents' time for it is printed with a list of destinations across each coupon. When selling, the agent folds the ticket and with a special form of punch perforates two rows of holes in each coupon simultaneously. The printing on ticket reads "good to destination shown between punch marks."

If the selling station does not, for some reason, give purchaser a ticket which may be used to the final destination on a foreign line, an "exchange order" is one of the coupons on the ticket sold. This order must be presented by the passenger to the agent of connecting line at the junction, who gives in exchange therefor a ticket reading to destination. The exchange orders are included by auditors in their settlements of interline ticket business.

When a certain quantity of baggage is checked free for each passenger, the problem is simplified if tickets are in use. In this event, some form of ticket must be presented when it is desired to check baggage, and the record that baggage has been checked is thereupon perforated in, or stamped upon, the ticket. The passenger with dishonest intentions is thus prevented from checking more baggage than the rules provide shall be checked upon one fare.

If a large percentage of conductors' collections consists of various forms of tickets, there are not the chances for leakage which occur when all fares are paid in coin and currency. It is quite true that tickets may be pocketed by the conductor, and sold, or substituted for cash when opportunity seems favorable, but this may be guarded against, by the auditor, in so many ways, that it is dangerous to attempt manipulation.

Having considered some of the advantages derived from the use of tickets, it may be well to trace, as a typical example, the history of a card ticket, from the time it leaves the printer's hands until it has fulfilled its destiny and been destroyed.

The ticket, used as an illustration, is a one-way card, printed "good for one trip, Cass to Hamilton." It is one of a package of 500 which are consecutively numbered, and delivered, with a shipment of other tickets, to the general passenger agent of our railway.

When the tickets are received and placed in stock by the

passenger agent, the auditor's office is notified. This may be accomplished with little labor by having the printer send an extra copy of his invoice with the tickets; receipt is acknowledged upon its face and it is sent to the auditor. When the tickets were ordered by the purchasing agent, a duplicate of the order was furnished the auditor, and the order and receipt are now checked against each other. If there are no discrepancies the receipt is filed as a charge against the passenger agent's office. This is done in order that the number of tickets in stock may be audited when desired.

The passenger agent may keep his record of tickets in a loose leaf book, having a small leaf for each printed form of ticket.

This sheet is printed with plain horizontal ruling and has three vertical columns. Across the top of the sheet is printed a description of the ticket, with blank spaces to be filled with station names. In this case, after being properly prepared, the sheet reads, "single trip, card, from Cass to Hamilton." Reading from left to right the three parallel columns have headings printed respectively:

Taken into stock—

Sent to Station Agent—

Sold, Spoiled and Returned by Agent.—

These sheets are grouped in their binders in the order that will best facilitate ready examination. They may be filed geographically, in station order, or alphabetically, but it is found advantageous, in either case, to group all the sheets for one selling station together.

When tickets are received from the printer, the date and their serial numbers are entered in the first column of the stock record.

A requisition, executed in triplicate, is received at the passenger agent's office from the Cass station agent. This order calls for 500 one-way tickets, good between his station and Hamilton, and gives the serial number of the last ticket in station stock, so that mistakes may be avoided and no numbers skipped. The tickets are sent, proper entry made in the second column of passenger agent's stock record, and the duplicate copy of the requisition is sent to the auditor. The original is forwarded, with the tickets, to the station agent, who examines them, affixes his receipt to the requisition and returns it to the passenger agent. The triplicate copy may now be destroyed for it has

served its purpose as a temporary record of tickets in transit between passenger agent and station agent.

The stock record is printed in this manner so that little labor is required in ascertaining the amount of tickets on hand. The difference between the first two columns shows the number of tickets on hand in the passenger agent's stock. The number of tickets on hand at the selling stations is represented by the difference between the figures in second and third columns of the record sheet.

When the station agent at Cass sells a ticket to Hamilton, he stamps on its back, with his dating machine, the date, his station name and other data contained in the stamp. If baggage is checked, he stamps or punches the ticket with the letters B-C. The agent has a station book or makes a report to the auditor, showing the day's sales of each kind of ticket, the number sold, the rate at which they were sold, and their serial numbers.

When the passenger delivers the ticket to the conductor, that individual mutilates it by means of his punch, before pocketing. Each conductor's punch perforates a different character or symbol and as the auditor keeps on his file a record of these perforations, it is a simple matter to determine what conductor has lifted each ticket.

At the end of the day or trip the conductor places all of his collections in an envelope, writing upon the outside of it his name, date, train number, description of contents and other information required. This envelope and its contents reach the office of the auditor.

The conductors' trip envelopes for a day are emptied of their contents and the tickets of one kind are gathered together. It is desired to ascertain with what regularity tickets sold are being collected and turned in by conductors. For this purpose a sheet is prepared for each printed form of ticket. The sheet is printed with ticket description across its top, as in the case of the stock record sheet. It is also printed with as many parallel columns of the numbers—01 to 100—as its width will accommodate. Space is left in each column, so that at its top or first number, an additional number may be prefixed.

If, for example, the Cass station agent is at present selling tickets to Hamilton numbered from 501 to 600 the first number

of one of the columns of the sheet in use for Cass-Hamilton one-way card tickets will have the prefix 5, and that column will, therefore, represent all the tickets numbered between 500 and 600.

The serial numbers of tickets that conductors have turned in, are checked off on these sheets. A vast amount of labor is involved in this work of sorting and checking, and it is not always considered advisable to check all of the tickets every day. If the collections of one division are checked for a certain period, and then another investigated, any glaring irregularities will be brought to light.

It will be found that the percentage of single trip tickets and the "going" portion of round trip tickets that are presented to conductors for passage on the day purchased will average about the same the year around, unless affected by some unusual conditions.

If a conductor is holding back some of his ticket collections, and juggling them with cash for the benefit of his own pocket-book, sooner or later an irregularity will be noticed, in checking the tickets that have been turned in. Too many numbers will be missing, and the abnormal condition represented may call for secret inspection after first making allowances for local conditions. For example, some school teachers or workmen may buy a week's supply of tickets in advance. Another puzzling irregularity was once caused by the fact that the round trip rate between the towns "A" & "C," twenty miles apart, was five cents higher than the sum of the rates between "A and B" and between "B" and "C." "B" was half way between "A" and "C." Some passengers who traveled daily from "A" to "C" and return, bought round trip tickets good between "A" and "B" and once a week got off at "B" and laid in a supply of round trip tickets good between "B" and "C." Sometimes round trip tickets are sold, each part of which is good going in either direction, and these may be bought in quantities by a passenger who uses but one or two a day. These things have a tendency to neutralize the value of the comparisons, if not taken into consideration.

Sometimes a station agent will make the mistake of not drawing a sharp line between his own and someone's else money, and does not report tickets promptly as sold. In this event,

the checking of tickets turned in, will reveal the fact that a certain ticket was lifted by the conductor before its serial number was included by the agent in his daily report of sales. The unexpected visit of a traveling auditor to that station, naturally follows.

After the ticket has been finally examined it is destroyed by burning or cutting. It is quite as important that tickets be effectually disposed of after being used as it is to safeguard them before being sold. At all times they represent money and are consequently a temptation to some persons.

It frequently occurs that the purchaser of a ticket is unable to use it as expected on account of some unforeseen contingency, and wishes to have it renewed or redeemed. Station agents may be permitted to give a new ticket of the same kind for one that has merely expired by limitation, returning the old one for credit. In all other cases it seems advisable to have the purchaser fill out a printed form certifying the genuineness of his claim, and that no service has thus far been rendered for the price paid. This certificate, with the ticket, is forwarded to the auditor, who approves its payment. A special form of check, printed so that its endorsement constitutes a receipt for the ticket in question, may then be drawn by the treasurer upon his petty cash fund.

Franchise provisions, the statutes and local ordinances must be observed in the printing of tickets and their redemption.

The ideal ticket will be one that meets all these requirements, is inexpensive, and can not be manipulated by agent, conductor, or passenger.

CHAPTER VII.

FREIGHT AND EXPRESS ACCOUNTS.

The "way-bill" is the unit upon which is builded a comprehensive system of accounting for merchandise accepted for transportation.

"Blanket" way-bills, which list several items upon one sheet, are used very largely by steam roads and to some extent by electric lines. They have some advantages, one of which is that the forwarding and the receiving agent are not required to list so many separate way-bills in their abstracts. On the other hand, when shipments arrive at their destination, expense bills must be made by the receiving agent. If wagons are waiting to haul away freight, there may be a delay which is annoying and exasperating to the teamsters and consignees.

Without further discussion of the blanket way-bill we will outline a system of accounting which requires a separate way-bill for each shipment. When freight is delivered at the freight house or car by the shipper, a short form of receipt, called a dray-ticket, which merely shows name and address of consignee, routing, date, name of shipper, and description of articles, is frequently given the shipper instead of a bill-of-lading. The dray-ticket may be exchanged for the formal bill-of-lading (Fig. 4) if desired.

Before forwarding freight, the agent who sends it, writes a way-bill covering the shipment. The way-bill (Fig. 5) is printed in four parts, perforated, and folded so that by means of carbon paper all the parts of the bill can be filled in with one writing. The first part is the original way-bill which moves with the shipment and is delivered to the receiving agent with the goods. With it goes the second part which is used as an expense bill; when charges are paid it is receipted by the agent and delivered to the consignee as his receipt. The third part is forwarded to the auditor, and the fourth is retained as an office file, by the forwarding agent.

Each agent is required to record the shipments forwarded

and received, on printed forms used for the purpose. The abstract of freight forwarded (Fig. 6) has columns in which are inserted the date, way-bill number, shipper, weight, freight, and the charges, prepaid or to be collected at destination. The way-bills forwarded from a station are numbered consecutively by the agent, commencing with number one on the first of each month. In writing up the abstract of bills forwarded, sufficient space is left so that all the shipments for one destination during the month may be grouped. As the abstract is written up daily, it is not always possible to guess at the amount of space that will be required, but paper is cheap, and ample room should be allowed.

- ✓ One copy of the abstract is kept in the office of the agent, and the other forwarded to the auditor. Both are written simultaneously by using carbon paper. The abstract may be a bound book with each alternate sheet perforated, to be detached, and sent to the auditor, or may consist of padded sheets, perforated at the binding edge with holes that will fit the ordinary post binder. In either event, the auditor's copy should be thus perforated, so that it may be permanently filed.

At the end of the month, and before sending his abstracts to the auditor, the agent totals the columns of weights and charges, and makes a recapitulation on an additional sheet, showing the totals, separately, of freight forwarded from his station to each other station on the line. This recapitulation is also footed, giving a grand total of freight forwarded from his station during the month.

The receiving agent makes a record of all freight received at his station and in most respects the procedure is the same as in the case of freight forwarded. The way-bills are grouped in the record (Fig. 7) according to the stations at which the freight originated. It is customary with some receiving agents to use a series of their own numbers in addition to the official number given the way-bill by the forwarding agent. These "pro" (progressive) numbers are frequently found, by the agent, to be quite a convenience, in identifying the way-bills received. The method of making recapitulation of totals and sending a copy of the abstract to the auditor is the same as used in handling forwarded shipments.

When the abstracts are received at the auditor's office, the

UNIFORM BILL OF LADING CONDITIONS.

1. No carrier or party in possession of all or any of the property herein described, shall be liable for any loss thereof or damage thereto, by causes beyond its control; or by floods or by fire; or by quarantine; or by riots, strikes or stoppages of labor; or by leakage, breakage, churning, loss in weight, changes in weather, heat, frost, wet or decay; or from any cause if it be necessary or is usual to carry such property upon open cars.
2. No carrier is bound to carry said property by any particular train or vessel, or in time for any particular market, or otherwise than with as reasonable despatch as its general business will permit. Every carrier shall have the right, in cases of necessity, to forward said property by any railroad or route, between the point of shipment and the point to which the rate is given.
3. No carrier shall be liable for loss or damage not occurring on its own road or its portion of the through route, nor after said property is ready for delivery to the next carrier or to consignee. The amount of any loss or damage for which any carrier becomes liable shall be computed at the value of the property, at the place and time of shipment under this bill of lading, unless a lower value has been agreed upon or is determined by the classification upon which the rate is based, in either of which events such lower value shall be the maximum price to govern such computation. Claims for loss or damage must be made in writing to the carrier at point of delivery promptly after arrival of the property, and if delayed for more than thirty days after the delivery of the property or after due time for the delivery thereof, no carrier hereunder shall be liable in any event.
4. All property shall be subject to necessary coverage and bailing at owner's cost. Each carrier over whose route Cotton is to be carried hereunder shall have the privilege, at its own cost, of compressing the same for greater convenience in handling and forwarding and shall not be held responsible for deviation or unavoidable delays in procuring such compression. Grain in bulk consigned to a point where there is an elevator may (unless otherwise expressly noted herein, and then it is not promptly unloaded) be there delivered, and placed with other grain of same kind, without respect to ownership, and if so delivered shall be subject to a lien for elevator charges in addition to all other charges hereunder. No carrier shall be liable for difference in weights or for shrinkage of any grain or seed carried in bulk.
5. Property not removed by the person or party entitled to receive it within twenty-four hours after its arrival at destination may be kept in the car, depot or place of delivery of the carrier, at the sole risk of the owner of said property, or may be, at the option of the carrier, removed and otherwise stored at the owner's risk and cost and there held subject to lien for all freight and other charges. The delivering carrier may make a reasonable charge per day for the detention of any vessel or car and for use of truck after the car has been held forty-eight hours for un-

- loading, and may add such charge to all other charges hereunder, and hold said property subject to a lien therefor. Property destined to or taken from a station at which there is no regularly appointed agent shall be entirely at risk of owner when unloaded from cars or until loaded into cars; and when received from or delivered on private or until sidings, shall be at owner's risk until the cars are attached to, and after they are detached from, trains.
6. No carrier hereunder will carry, or be liable in any way for any documents, special articles or articles of extraordinary value not specifically rated in the published classification, unless a special agreement to do so, and a stipulated value of the articles, are endorsed hereon.
7. Every party, whether principal or agent, accepting inflammable, explosive, or other goods without previous full written disclosure to the carrier of their nature, shall be liable for all loss or damage caused thereby; and such goods may be warehoused at owner's risk and expense or destroyed without compensation.
8. Any alteration, addition, or erasure in this bill of lading which shall be made in this bill of lading, shall be void.
9. If the word "order" is written hereon immediately before or after the name of the party to whose order the property is consigned, without any condition or limitation other than the name of a party to be notified of the arrival of the property, the surrender of this bill of lading properly endorsed shall be required before the delivery of the property at destination. If any other than the aforesaid form of consignment is used herein, the said property may, at the option of the carrier, be delivered without requiring the production or surrender of this bill of lading.
10. Owner or consignee shall pay freight at the rate herein stated, and all other charges accruing on said property, before delivery, and according to weights as ascertained by any carrier hereunder; and if upon inspection it is ascertained that the articles shipped are not those described in this bill of lading, the freight charges must be paid upon the articles actually shipped, and at the rates and under the rules provided for by published classifications.
11. If all or any part of said property is carried by water over any part of said route, such water carriage shall be performed subject to the conditions, whether printed or written, contained in this bill of lading, including the condition that no carrier or party shall be liable for any loss or damage resulting from the perils of the lakes, sea, or other waters; or from explosion, bursting of boilers, breakage of shafts, or any latent defects in hull, machinery or appurtenances; or from collision, stranding, or other accidents or navigation; or from prolongation of the voyage. And any vessel carrying any or all of the property herein described shall have liberty to call at intermediate ports; to tow and be towed, and to assist vessels in distress and to deviate for the purpose of saving life or property.

FIG. 4.—(Reverse side).

first step is to make a comparison of the recapitulation figures. If the records have been correctly kept, and no way-bills missed, the total of prepaid freight reported as received from Webster, by the Marcus agent, should equal the total of freight reported forwarded to Marcus by the Webster agent. If the totals are

| | | |
|---------------|-------------------------|--------------------------------------|
| 1 | | |
| Station | 190 | Freight Way-Bill No. |
| Received from | Original Point Shipment | |
| Consignee | | |
| Billed to | Destination | |
| No. Packages | DESCRIPTION OF ARTICLES | WEIGHT RATE FREIGHT ADVANCES PREPAID |
| | | |
| | | |
| | | |
| | | |
| | | |

AGENT WILL IN ALL CASES WHEN DELIVERING SHIPMENT, TAKE CONSIGNEE'S RECEIPT ON THIS FORM, AND FILE IN HIS OFFICE

Received the property described herein, in good order, except as noted

Consignee

| No. 2 | Station | 190 | Freight Way-Bill No. | | | |
|----------------------|--------------------------------|------------|-----------------------------|---------|----------|---------|
| Received from | Original Point Shipment | | | | | |
| Consignee | | | | | | |
| Billed to | Destination | | | | | |
| No. Packages | DESCRIPTION OF ARTICLES | WEIGHT | RATE | FREIGHT | ADVANCES | PREPAID |
| | | | | | | |
| | | | | | | |

THIS FORM TO BE SIGNED BY AGENT AND DELIVERED TO CONSIGNEE WITH THE SHIPMENT.

Received payment for the Company _____ **Agent** _____

FIG. 5.—Actual size 7½" wide by 5½" high.

equal, it will be found unnecessary to check each item of the abstracts. Instead, a series of tests may be made by checking a few way-bills at random, proving that collusion has not existed between the agents whose reports are under inspection.

When differences between the totals reported are found, it will be necessary to check each item in order to ascertain which

the correction is issued. The agent receiving the correction satisfies himself of the error and makes the proper change in his records. He then signs two of the copies and files the other for office record. One of the signed copies is sent to the auditor and the other is returned to the agent who issued the correction. It is not customary to issue a correction when the error is but a few cents, and under an established minimum. After the

--- TRACTION CO.
FREIGHT FORWARDED. Sheet No.-----

Station. Month of-----190-----

| DATE | WAY-BILL NO. | SHIPPER | WEIGHT | FREIGHT | ADVANCES | PREPAID | UNCOLLECTED, PREPAID AT END OF MONTH | |
|------|--------------|---------|--------|---------|----------|---------|--------------------------------------|--|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

FIG. 6.—Actual size 10" wide by 16" high.

correction is verified by the auditor the necessary charge or credit is made by him, in the agent's account. Errors which are located after the agents' monthly abstracts are received in the auditor's office, are called to the attention of forwarding and receiving agents, by the use of correction notices sent out by the auditor. The agents correct their records and advise the auditor that they have done so.

Many small stations are without agents, and as shipments

FREIGHT RECEIVED. Sheet No.-----

Station Month of-----190-----

| DATE | WAY-BILL NO. | CONSIGNEE | WEIGHT | FREIGHT | ADVANCES | PREPAID | COLLECT | DATE PAID | UNCOLLECTED, PREPAID AT END OF MONTH | |
|------|--------------|-----------|--------|---------|----------|---------|---------|-----------|--------------------------------------|--|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

FIG. 7.—Actual size 13½" wide by 17" high.

are received from and delivered to these points, provision must be made for way-billing and recording. Some railroads have the agent at the next forwarding station on the line make way-bills, while others have the conductor on the car handling the shipment, do this work. If the conductor makes the way-bill and turns it over to the nearest agent, to be written up in his record, the conductor will be relieved of accounting which

ance sheet or "account current" (Figs. 10) which is forwarded to the auditor. This is the account of the agent with the company, from the standpoint of the former. In essential features it agrees with the agents ledger account kept at general offices.

On the left, or debit side of the account, the agent charges himself with the total freight and advanced charges on freight received at his station, charges on prepaid freight forwarded, and debit balances of correction statements. On the right side of the account he takes credit for the amount of prepaid charges on freight received, advanced charges on freight forwarded, credit balance on correction statements, and the cash remitted.

— — — TRACTION COMPANY
FREIGHT DEPARTMENT.

No. _____

Daily Remittance from _____ Station for _____ 190 _____

INSTRUCTIONS: This report must be made up each day and forwarded to CASHIER at _____
 — — — with Cash collection in envelope.

| COLLECTED ON EXPRESS RECEIVED | | | | COLLECTED ON EXPRESS FORWARDED | | | |
|-------------------------------|--------------|----------------|--------|--------------------------------|--------------|--------------|--------|
| W.B.NO. | DATE OF W.B. | FROM (STATION) | AMOUNT | W.B.NO. | DATE OF W.B. | TO (STATION) | AMOUNT |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| TOTAL | | | | TOTAL | | | |

Actual Total Remittance \$ _____

FIG. 9.—Actual size $8\frac{1}{2}$ " wide by $10\frac{1}{2}$ " high.

Detail of the latter item is shown in a separate column, the amounts remitted each day being shown separately.

Whatever balance there may be is entered, and carried forward to the following month's account. This balance consists chiefly of uncollected bills, and the agent should be required to itemize them, at all except the larger stations, giving reasons for non-collection, if bills are more than a few days old. If he is allowed several days after the end of the month in which to make a final collection before making up his account, the score of uncollected bills should be comparatively clean.

There has been considerable discussion by railroad accountants and their associations, regarding the relative merits of daily, weekly and monthly station reports of freight accounts. The

ACCOUNT CURRENT

From

STATION

Month of

1920

Agent, in account with

TRACTION COMPANY.

CR.

| | | | |
|----|--|----|--|
| 1 | To Balance due Company from last month. | 2 | By Balance due Agent from last month. |
| 3 | To Amount of Freight on the month's Way Bills required | 4 | By Amount of Freight Charges on Freight forwarded |
| 5 | To Amount of Advance Charges on this month's Way Bills required. | 6 | By Amount of Advance Charges on Freight forwarded. |
| 7 | To Amount received for Freight Charges on Freight forwarded. | 8 | By Payments this month as per drafts in sample. |
| 9 | To Debit Balance Correction Statements | 10 | By Credit Balance Correction Statement. |
| 11 | To Balance forwarded Freight | 11 | By Balance due Company carried next month's account as follows |
| 13 | To Balance Received Collected. | 12 | Uncollected Freight Bills on hand |
| 15 | To Ticket Sales | 14 | Miscellaneous |
| 17 | To Miscellaneous. | | |

This Account Current must be forwarded to the Auditor on or before the fourth week-day after the close of the month. Agents will forward all cash on hand on the last day of the month and will show detailed accounts of all remittances during the month in the column provided for all purpose. No credit is to be taken in this Account Current for remittances in the following month; such amounts should appear in the list of uncollected bills on the back hereof.

I certify that the above statement is correct,

AGENT MUST SIGN PERSONALLY

Agent.

| | |
|-------------|----------|
| REMITTANCES | |
| PAID | RECEIVED |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | 6 |
| 7 | 7 |
| 8 | 8 |
| 9 | 9 |
| 10 | 10 |
| 11 | 11 |
| 12 | 12 |
| 13 | 13 |
| 14 | 14 |
| 15 | 15 |
| 16 | 16 |
| 17 | 17 |
| 18 | 18 |
| 19 | 19 |
| 20 | 20 |
| 21 | 21 |
| 22 | 22 |
| 23 | 23 |
| 24 | 24 |
| 25 | 25 |
| 26 | 26 |
| 27 | 27 |
| 28 | 28 |
| 29 | 29 |
| 30 | 30 |
| 31 | 31 |
| TOTAL | |

FIG. 10.—(Face)—Actual size 13½" wide by 10" high.

Month of _____ 190__

Station _____

ACCOUNT CURRENT

TRACTION COMPANY

Report of Way Bills on hand uncollected at close of business _____ 190__
and explanation of other items constituting Balance due by Agent as shown in Account Current.

| DATE | WAY-BILL NO. | STATION FROM | CONSIGNEE | ARTICLES | FREIGHT AND CHARGES | WHY UNCOLLECTED |
|------|--------------|--------------|-----------|----------|---------------------|-----------------|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

FIG. 10.—(Back)—Actual size 10" wide by 13½" high.

foregoing is based upon a system of reports to be made monthly by agents, and it is thought that in most cases the plan will be found to give good results with a minimum of labor and expense.

One of the large items of work for the freight auditor is the revising of way-bills, which he places in the hands of competent rate clerks. The way-bills must be checked for the detection of errors made by agents. These are numerous, and consist of mathematical errors in extension and addition, as well as errors of classification.

Agents should be careful to include in the amount of charges shown on the way-bill, all payments advanced for drayage, coo- perage or other extraordinary expense, as well as amounts paid, for freight charges, to connecting lines. The agents should be required to obtain a receipt for each expenditure of this kind. These vouchers when attached to and forwarded with the account current, vouch for the accuracy of the item "advanced charges on freight forwarded" and "prepaid beyond" for which the agent takes credit.

Some lines handle light or "package" freight on passenger cars while others have special fast express cars for this service; frequently wagons are used for the delivery of packages to con-

signees. If a contract has been let to an express company to handle this business, the auditor of the railroad has comparatively little to do with the system of accounting in vogue. The contract with the express company may provide that the use of cars upon certain schedules will be paid for at a minimum rate per diem, with the proviso that a percentage of gross receipts in excess of a fixed sum shall revert to the railroad company. The contract may also provide for a sum to be paid the railroad station agents handling the business, based upon the charges collected on shipments to and from the stations. The contract usually provides that the railroad auditor shall have access to the express company's accounts and records in order that he may verify the receipts reported, and that is usually the extent of the work necessary in cases of this kind.

If the railroad operates its own express service, it will be found necessary to furnish shippers with tickets or tags for some articles such as milk cans, chicken coops or ice cream freezers, which may be shipped over the lines in quantities, particularly when a section of farming country is located tributary to a large city. A ticket good for the transportation of a 10 gallon can of milk or a 5 gallon freezer of cream may be sold in quantities to intending shippers. The ticket or tag is in two parts, one of which is taken up by the conductor hauling the consignment to its destination, the other being left attached to the package until it is emptied and is returning home. Newspapers are sometimes sent out in packages from the city of publication to suburban towns; gummed labels are sold, printed in multiples of five or ten pounds, to be pasted upon each package as it is weighed at the newspaper office. Trainmen are instructed to honor these "stickers" for transportation of the classes of goods specified.

The express way-bill that is sent with package shipments may be similar in most respects to the four-part freight way-bill with a symbol of some kind added to identify it with the express business. The way-bill is handed to the motorman or the conductor of the car handling the shipment, and delivered by him to the agent at destination. The agents may use the same kind of records for listing the express way-bills received and forwarded as in the case of freight.

When wagon delivery is furnished, a check upon the drivers is had by means of the delivery sheet (Fig. 11). This is filled out

in ink by the station agent, who, with the driver checks the goods into the wagon, when loaded. The drivers secure the signatures of consignees to the delivery sheet and upon returning to the station office must account to the agent by returning the sheet properly signed in all cases where packages have been delivered, and by turning over the money collected. When addresses are deficient or for some other reason drivers are unable to deliver packages the way-bills are transferred from the delivery sheet to an "on hand" book, until such time as the correct address is received or the shipment is returned to the shipper. The delivery sheets are filed with the other station records, and are frequently a means of settling disputes when claims are made for shortage or damage.

Shippers who desire to have money collected from the consignee and returned to them, should be required to mark each and every package in the shipment with the letters C. O. D.

| Received from _____ | | | | | | | | | | For _____ | | |
|---|------|------------|---------|-------|-----------|---------|-----|---------|-----------|-------------|------|---------------|
| In good order the following articles, set opposite our respective names. _____ 190. | | | | | | | | | | | | |
| No | Date | Where From | Article | Value | Consignee | Address | W's | Expense | Collected | Received By | Paid | Remarks, Etc. |
| | | | | | | | | | | 1 | | |
| | | | | | | | | | | 2 | | |
| | | | | | | | | | | 3 | | |

FIG. 11.—Actual size 15" wide by 8½" high.

Then, if the way bill should become lost in transit or should not arrive at destination as soon as the freight, the goods will not be delivered by the agent, without making the proper collection. Agents should be instructed to see that cash only is accepted when C. O. D. shipments are delivered, for if the shipper doesn't care to take chances of collection, it is not advisable for the agent to accept a check which may be found worthless.

A very stout manila envelope may be used for the return of money collected upon C. O. D. shipments. If conditions are such that agents ordinarily have a reasonable amount of cash on hand, it may be possible to dispense with the actual return of the money collected by the receiving agent to the agent who forwarded the C. O. D. shipment.

Instead, a printed letter of advice, filled in with description of the shipment and amount of C. O. D. collection will be sent to the forwarding agent by the receiving agent, after he has

actually collected the money from the consignee. This letter recites that the money has been collected and that the shipper should therefore be paid by the forwarding agent. The agent collecting the money charges himself in the account current when made up, and the agent paying the shipper takes credit in his account, attaching the letter of advice as authority for the credit taken. If the C. O. D. collections are numerous or in large amounts and not very evenly balanced between the stations sending and receiving, this plan will be found impracticable. Agents at some of the stations may not have enough cash on hand to pay the amount of C. O. D. shipments forwarded from their stations and collected at others.

As the exchange of equipment becomes more prevalent in electric railway practice, it will likely be found advisable to adopt some of the steam railway forms of agreement. When cars are exchanged by steam railways, the amount charged for rental and the liability for damages to equipment are governed by the rules of the association exercising jurisdiction in the premises.

These rules provide that a flat rate, say \$1.00 per day, be charged for freight cars in the service of a foreign line. The owner is given the right to demand return of the car within a certain number of days, and to charge an additional penalty rate for each day the car is held thereafter.

When cars are in switching service, the switching line is entitled to make reclaim upon the road for which the service is performed, as an offset to the amount it is required to pay the owner for the use of the car. These are known as the per-diem rules, and in connection with the car-service charged shippers, are uniformly observed by steam roads.



CHAPTER VIII

BAGGAGE.

Notwithstanding the fact that baggage is handled for passengers in ordinary cases without a separate specified compensation, it is as carefully guarded while in the railway company's possession as the highest class of revenue-producing merchandise.

The fact that baggage is safely and cheaply handled is a feature that has done much to popularize electric railways, and to attract a considerable percentage of the traveling public.

It is generally understood that personal wearing apparel only is considered as baggage, but the lines are not always this closely drawn.

The customary rules in effect provide that baggage shall not be checked for a passenger unless he holds some form of ticket good for his own transportation.

The exceptions to the regular practice of checking a certain amount of baggage without charge, are not considered in this discussion. The exceptional method of handling involves the use of a combination of the express and baggage systems, and varies according to local conditions.

In considering the subject of "free" baggage, the transaction between the prospective passenger and the station agent is the logical start. The passenger delivers his baggage to the agent who gives in exchange for each separate piece, a "check" which must be presented when it is desired to reclaim the property.

If the rules provide that 150 lbs. of baggage shall be carried free for each passenger holding a ticket, and the passenger's trunk does not exceed that weight, his ticket is punched as the check is given him, and he is not further concerned until he wishes to secure the baggage at destination.

Usually the letters B C or a distinguishing symbol is punched, stamped or written upon the ticket. This is a warning that the checking privilege granted by the purchase of that particular ticket has been exercised, and prevents an abuse of the right by designing travelers.

A metal check is sometimes used, or a heavy manila paper check in a metal holder. Either of these, or the manila check attached to the trunk with a string tie are satisfactory. In all cases the check is in duplicate, numbered, and the one given the passenger matches the one attached to the trunk.

There are occasions when agents who are careless or hurried

STORAGE RECEIPT

No. 1876

This is to Certify that bearer has paid to this company on account of storage, amount indicated below, by highest figures in dollars and cents.

| | |
|-------------------------------|----------------------|
| Check No. _____ | |
| Received from Train No. _____ | |
| Received _____ | o'clock M. _____ 190 |
| Delivered _____ | o'clock M. _____ 190 |
| Signed _____ Agent | |

| Dollars | 1 | Cents | 5 |
|---------|----|-------|----|
| | 2 | | 10 |
| | 3 | | 15 |
| | 4 | | 25 |
| | 5 | | 35 |
| | 6 | | 45 |
| | 7 | | 55 |
| | 8 | | 65 |
| | 9 | | 75 |
| | 10 | | 85 |
| | | | 95 |

No. 1876

| | |
|-------------------------------|----------------------|
| Check No. _____ | |
| Received from Train No. _____ | |
| Received _____ | o'clock M. _____ 190 |
| Delivered _____ | o'clock M. _____ 190 |
| Amount Collected _____ | |

INSTRUCTIONS: Agents must use care in tearing receipts so that highest figures in dollars and cents on the part given the passenger will indicate the amount to be paid. This stub showing remaining figures and properly filled out, must be sent at once to Accounting Department. Money collected to be included in the daily cash remittance.

FIG. 12.—Actual size 3½" wide by 6" high.

make mistakes in checking baggage, giving the passenger a check numbered differently than the one attached to the baggage. When the passenger presents his check to the agent at destination, and the discrepancy is noticed, the owner proves his ownership and receipts for the baggage.

A printed form to be used as a receipt in cases of this kind, is furnished agents. The same form may also be worded so

that it answers the purpose of a receipt for baggage delivered when check has been lost. In case the check has been lost, the passenger is usually charged a nominal sum, and is made to establish ownership by describing contents of his trunk and in other ways to prove that he is entitled to it.

Baggage is sometimes left at destination longer than the twenty-four or forty-eight hours allowed free, and storage is then charged at a certain rate per day. Agents use a storage receipt (Fig. 12) which is given to the owner when charges are paid. This receipt is provided with an audit stub. It, as well as the lost or mismatched check receipt, is numbered, and charged to the agent. He is required to report them the same as he does tickets, and to send spoiled ones to the auditor for credit. The storage receipt has two columns of figures in its middle, one representing dollars and the other cents. A line which is cut through the paper, divides the columns. The passenger is given the receipt showing the highest amount he has paid, and the act of tearing the receipt, leaves the self-explanatory stub which is sent to the auditor. If the passenger does not get a receipt, the effect of the audit is lost, but agents are not usually inclined to take chances by withholding receipts.

The term "excess baggage," intended to apply to the baggage checked upon a ticket, in excess of the free weight allowed, is sometimes used to designate all baggage for which a charge is made. It may be a bicycle for which a flat rate is charged, a piece of baggage destined to a station upon a line that charges for all baggage, or a trunk that must be transferred by wagon at a junction point. Because cash is collected, a special form of check is used, and carefully accounted for by agents.

A convenient form of "excess" check (Fig. 13) is one made of heavy manila, its color contrasting with the "free" check, and printed in triplicate instead of duplicate. The additional part is used as an audit stub and sent to the auditor by the forwarding agent reporting. The check has the usual places provided for writing names of starting point and destination, and other spaces for the additional data required by its use. The amount collected, whether in cash or ticket coupons, number of passengers, and, the number of pieces checked, are shown.

If several pieces are checked for one passenger, "free" checks are attached to all but one piece of baggage, to which

the "excess" check containing the foregoing information is tied. The numbers of the free checks accompanying are written upon the excess check. If the baggage travels over several lines or divisions to reach its destination, the routing is shown by writing names of the junction points on the check.

The agent who delivers the baggage at destination detaches the trunk check and sends it, with the passenger check, to the auditor. In order that irregularities on the part of agents may be prevented, it is necessary to audit the reports, which is done by comparing the audit stubs with the portions of the checks sent in by receiving agents.

The excess checks furnished agents are charged against their

| Prepaid or Excess Baggage Check | | Prepaid or Excess Duplicate Check (Hand to Passenger) | | PREPAID OR EX-CESS CHECK AUDIT STUB. | |
|---|--|--|--|---|--|
| Date..... | | Date..... | | Date..... | |
| From..... | | From..... | | From..... | |
| To..... | | To..... | | To..... | |
| Via..... Junction Points | | Via..... Junction Points | | Via..... Junction Points | |
| To..... | | To..... | | To..... | |
| To..... | | To..... | | To..... | |
| To..... | | To..... | | To..... | |
| To..... | | To..... | | To..... | |
| Put Balance of Route on Back if Necessary | | Put Balance of Route on Back if Necessary | | Put Balance of Route on Back if Necessary | |
| Check No. on Accompanying Piece..... | | Check No. on Accompanying Piece..... | | Check No. on Accompanying Piece..... | |
| No. Passengers..... | | No. Passengers..... | | No. Passengers..... | |
| No. Pieces..... | | No. Pieces..... | | No. Pieces..... | |
| Excess Weight..... lbs. Rate..... | | Excess Weight..... lbs. Rate..... | | Excess Weight..... lbs. Rate..... | |
| Amount \$..... | | Amount \$..... | | Amount \$..... | |
| Collected \$..... | | Collected \$..... | | Collected \$..... | |
| Indicate how paid by crossing out other two | | Indicate how paid by crossing out other two | | Indicate how paid by crossing out other two | |
| No. X 8503 | | No. X 8503 | | No. X 8503 | |

FIG. 13.—Actual size 6½" wide by 3" high.

accounts, in the same manner as book or coupon tickets. The agent reports the numbers of the checks used, and the amount collected, on his daily, weekly or monthly report. If desired, space may be provided on the ticket report for taking care of check sales.

If baggage is checked to a station where there is no agent, the trunk and baggage portions of the check are both attached to the baggage, to be detached by the conductor. Conductors may also be furnished with a supply of checks to be used in checking baggage for passengers who board the cars at non-agency stops. If through ticketing arrangements make it necessary to transfer baggage by wagon at a junction with another line, an extra coupon is printed in the check. This coupon is de-

tached by the drayman hauling, and used in support of his bill against the railway for transfer charges. The loss of, and damage to baggage is best prevented by care on the part of the employes handling it, but with the best of intentions it sometimes goes astray or is damaged. In order that the blame may be located, a report is made by each employe who handles it.

The conductors' report (Fig. 14) should be small enough so that a pad can be carried in the pocket. One or more of them is made out each day, and sent to the auditor. The form has

**CONDUCTOR'S DAILY
BAGGAGE REPORT**[illegible]

FIG. 14.—Actual size 3" wide by 5" high.

space for insertion of the car or train numbers, the check numbers, starting points and destinations. If baggage is in bad order when received, that should also be stated in reporting. It is sometimes practicable to have the conductor receipt to the agent forwarding, and to secure a receipt from the receiving agent. This establishes the responsibility beyond fear of contradiction, and the plan should be used whenever possible. Many electric lines carry baggage on regular passenger cars and do not have a man upon the car solely to look after baggage. The conductor

may be so busy at stations in looking after his car and passengers that he has not time to sign for or secure receipt for baggage. The plan described may be used as a substitute for the receipt plan.

The agent forwarding baggage keeps a "Forwarding and Transferring Record" (Fig. 15) in book or loose-leaf form. This is written up daily as baggage is forwarded, and sent to the auditor at the end of certain periods. The dates and numbers of the checks are entered in the record, followed by name of destina-

| BAGGAGE Forwarded and Transferred at _____ Station. Month of _____ 190 | | | | | | | | | |
|--|-----------|--------------|-------------|--------------------|--------------------------------|------------------------|----------------|--------------------|---------------------|
| Date | Check No. | Checked From | Destination | Rec'd on Train No. | Transferred by Teamster (Name) | Forwarded by Train No. | Complete Route | Description of Bag | Amount of Bag Order |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

FIG. 15.—Actual size 9" wide by 11" high.

tion. Columns are also provided for the inclusion of the numbers of trains or cars upon which baggage is forwarded, brief description of the baggage, such as trunk or satchel, and statement of the condition in which it left the station. Agents at junctions who use the sheet as a record of transfers, insert the name of the teamster hauling from station to station.

The agents keep a "Receiving Record" (Fig. 16) which is also written up promptly as baggage is received. This record has

| BAGGAGE Received at _____ Station. Month of _____ 190 | | | | | | | | | | | |
|---|-----------|--------------|--------------------|-------------|---------------------|------|-----------|--------------|--------------------|-------------|---------------------|
| Date | Check No. | Checked From | Rec'd on Train No. | Description | Amount of Bag Order | Date | Check No. | Checked From | Rec'd on Train No. | Description | Amount of Bag Order |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
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FIG. 16.—Actual size 9" wide by 11" high.

the dates, check numbers and originating stations written in it, followed also by a statement of the condition in which baggage is received, and a brief description.

These records may be used in auditing the excess checks if desired, although the actual labor involved may prove that comparison of the several portions of checks is easier and as safe.

The excess checks, if numbered with a distinguishing prefix, are readily identified in examining the station agents' reports.

By comparing the receiving with forwarding agents reports, the route reported by forwarding agent is confirmed. Weights, however, can not be verified in the auditors office, and if the receiving agent does not report an error made by forwarding agent, the mistake will go uncorrected unless noticed by a traveling auditor or other official. An audit of weights may be had, however, by providing a column for that purpose on forwarding and receiving record sheets. A comparison in the auditor's office will then locate discrepancies in the weights reported. The weights may also be used in compiling statistics of baggage tonnage.

CHAPTER IX

INTERLINE TICKETS AND BAGGAGE.

A ticket which is good for transportation over one or more foreign lines in addition to the selling road, is designated as an "interline," ticket. It is generally a coupon ticket sold for a particular trip, but as interchangeable mileage and coupon books are in all important particulars interline tickets, they will be considered as such in this outline of the methods used in making settlements.

The issuance and use of interchangeable transportation books are usually governed by the rules of an association of railways. A group of lines traversing certain territory agree upon the form of ticket to be sold and the plan to be followed in accounting.

Some of the books used contain coupons representing one mile of transportation each while in other cases each coupon is good for five cents worth of transportation over any of the lines in the association.

The books used by all roads in the agreement are uniform, with the exception of a different number or symbol for each line, which is printed on every coupon.

The books are consecutively numbered, and usually contain a printed contract that must be signed by the purchaser.

As coupons are collected by conductors they reach the auditor's office, where they are separated from other tickets. The ✓ coupons for each selling railway are placed together, to be used in the monthly settlements.

At the end of each month the coupons, and a bill for the amount they represent, are mailed to the railway which sold them, and the association rules usually necessitate prompt settlement. ✓ Remittances of balances are made, the debtor line sending voucher for the difference between the amount of coupons it accepts and the amount accepted by its creditor line.

Unexpired unused coupon books are redeemed by the issuing railway, settlement being usually made by charging current tariff rates for the coupons used.

Some association agreements provide for a central bureau which acts as a clearing-house in making settlements between the lines. The expense of maintaining the bureau is prorated upon a mileage or gross earnings basis, and the bureau in some cases makes refunds as well as settlements.

There are a great many varieties of interline tickets sold for one-way or two-way (round) trips. The ordinary skeleton, multiple-destination and other forms of interline tickets are made up on the same general plan. This is that there shall be one or more coupons for each line over which the passenger travels.

The reports of sales are made by the lines selling interline tickets, to all of the lines over which passengers are routed. These reports are made monthly and are compiled from the station agents' reports of interline tickets sold.

STATEMENT OF INTERLINE TICKETS-----190

—ISSUED BY—
EASTERN TRACTION CO. FOR ACCOUNT-----

MONTH OF-----190----

PLEASE MAKE NO ALTERATIONS ON THIS REPORT. IF ANY DISCREPANCIES ARE FOUND, ADVISE BY LETTER AND
CORRECTIONS WILL BE MADE IN SUBSEQUENT STATEMENT. -----AUDITOR.

| LINE | STATION SOLD AT | DESTINATION | FORM | CONSECUTIVE NOS. | | NO. COUP'NS | | THROUGH RATE | PROPORTION | AMOUNT | REMARKS |
|------|-----------------|-------------|------|------------------|---------|-------------|----|--------------|------------|--------|---------|
| | | | | OPENING | CLOSING | CLASS | BT | | | | |
| 1 | | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |

FIG. 17.—Actual size 9" wide by 12" high.

The form of report (Fig. 17) generally used contains spaces for the names of selling stations and destinations, and the forms of tickets. These are followed by columns in which are entered the consecutive opening and closing ticket numbers, number sold, through rate, proportion due the foreign line and total amount due for each kind of ticket sold.

As these reports are received by the "foreign" line they are compared with the coupons that have been lifted by conductors. It may be well at this point to call attention to the desirable features of this plan of accounting, which has been used for a long period by steam railways and to a large extent in later years by electric interurban lines.

If the freight plan of making settlements on the basis of "received" reports were followed there would no doubt be

many more errors in ticket settlement reports, than there are at present. Conductors are more likely to miss collecting ticket coupon from a passenger than a freight shipment is to go entirely astray. When the issuing line sells a ticket it is practically a certainty that the ticket will be included in its reports to the foreign lines interested. If a ticket is omitted, it is hardly likely that the foreign line conductor will also fail to collect it, and when the auditor examines the coupons lifted, a correction notice is sent to the issuing line. If "received" reports were made, the tickets that conductors failed to collect would help swell the number of errors made by station agents and clerks.

Settlements are usually made promptly upon receipt of monthly reports, and corrections are taken into account at the time of the next settlement.

The correction sheet (Fig. 18) which is sent to the auditor of the

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MR.-----

AUDITOR-----

DEAR SIR: Please note the following corrections on your Interline Ticket Report for-----
and take into account in your next statement. Respectfully, ----- Auditor.

| DATE | FROM | TO | FORM | OPENING | CLOSING | NO. TKS. | CLASS | AS REPORTED | | | SHOULD BE | | |
|------|------|----|------|---------|---------|----------|-------|-------------|---------|--------|-----------|---------|--------|
| | | | | | | | | TW. RATE | OUR FEE | AMOUNT | TW. RATE | OUR FEE | AMOUNT |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | |

FIG. 18.—Actual size 9½" wide by 7½" high.

issuing line as soon as his ticket reports have been checked, is a form somewhat similar in columnar ruling to the interline sales report. At the right of the sheet are columns headed "as reported" and "should be." The incorrect rates and amounts reported are inserted in the first series of these columns followed by the correct figures. If tickets have been omitted entirely, the amounts are entered only in the columns headed "should be."

When the monthly reports have been exchanged by issuing lines, a balance is struck, and payment is made by the debtor line. Some railways make drafts upon debtor lines for balances, and this has a tendency to expedite settlements which might otherwise be carelessly delayed.

The form of draft (Fig. 19) ordinarily used is a sheet 3½ x 8½ inches which contains at its left side a brief statement of the ac-

count. In order to save writing, the names of the months are printed and it is only necessary to enter the debit and credit figures at the proper places. If the draft is used for other purposes, such as freight settlements, a description of the accounts settled is written in the body of the draft.

Tickets are sometimes sold, giving the passenger the privilege of different routes beyond a certain junction. When this is done, the interline ticket is printed with some form of coupon that is an order upon the agent of connecting line to issue an interline ticket of different routing in exchange for the one taken up. This complicates the accounting somewhat, as the tickets have already been reported to the lines interested in the original routing.

| Debit | | Credit |
|-------|-----------|--------|
| | January | |
| | February | |
| | March | |
| | April | |
| | May | |
| | June | |
| | July | |
| | August | |
| | September | |
| | October | |
| | November | |
| | December | |

| | |
|---------------------------------------|---------|
| NORTH & SOUTH TRACTION CO. | |
| ST. LOUIS, MO., | |
| 19 | |
| Pay to the order of | \$ |
| Dollars | |
| for | |
| TO | |
| | AUDITOR |

FIG. 19.—Actual size 8½" wide by 3½" high.

The exchange is made upon authority of the passenger or traffic department of the line making the exchange. The auditor sends monthly statements of coupon tickets issued in exchange for tickets of foreign lines' issue, to the interested lines. The tickets lifted in exchange for the ones issued, are sent with the statements. The form used contains columns for date, issuing line, where sold, form, and consecutive numbers of the tickets taken up. These are followed by columns describing the tickets issued in exchange, and a statement of the amount due the issuing line for making the exchanges.

These reports are checked with the accompanying tickets, by the foreign line auditor. It is then necessary to correct the reports he has made of the original routing, and this is done

by deducting the amounts reported to lines not used in the changed routing, from the next month's reports.

A uniform interline passage ticket has been the subject of much discussion on the part of steam railway traffic officials and accountants. The greatest precautions must be taken to prevent fraudulent manipulation. The use of an approved safety paper is generally considered essential, and when writing must be done by agents, a particular grade of ink should be used. An ink made in Japan by a secret process is said to be used in that country on all government records. It has been found that it resists all attempts at alteration.

It is desirable that roads doing an interline passenger business should agree upon a few standard tickets, of the forms requiring very little writing on the part of agents. This will minimize the liability of error and facilitate settlements.

If one car and crew runs over two lines from starting point to destination it is sometimes thought advisable to make but one collection for the entire trip from through passengers paying cash fare. A means must then be provided for making interline settlements of the cash collections. This is done by having conductors issue a receipt for each fare paid. The receipt has two audit stubs that are punched simultaneously with the part given the passenger and in the same relative places. One of these audit stubs is received by each of the lines interested in the cash fare. When reports of cash collections are received from the collecting line they are verified by comparison with the audit stubs.

The accounting for charges on "excess" (paid) baggage checked on interline tickets does not materially differ from the plan used in making ticket settlements.

If the baggage travels over two lines only, the receiving line will possess the checks detached from the baggage, to use in verifying reports made by the forwarding line. As extra baggage coupons are not ordinarily provided for each line handling a trunk traveling over three or more lines to reach destination, agents' or conductors' "passing" reports must be used. The intermediate line will have no coupon to show that it has handled the baggage, and omissions or errors in forwarding lines' reports will be located by comparison with the reports of its own employees.

CHAPTER X.

INTERLINE FREIGHT ACCOUNTING.

The freight shipment that travels over two or more lines to reach its destination is handled by interline or "through" billing. The methods of accounting for this business are determined by the agreements which have been made between the officials of the lines concerned. These agreements specify that "audit office" or "junction" settlements of freight collections shall be made.

An audit office plan of settlement is usually desired by the railroad's traffic officials, whose duty it is to increase the business of the line, for the reason that this plan sometimes saves a certain amount of delay in handling freight at terminals. The traffic official is thus enabled to promise prompt delivery to final destination. On the other hand the road may not wish to extend credit to a connection not financially strong, and the junction settlement plan will be insisted upon. Another item usually taken into consideration, when deciding upon the method of settlement, is the relative amount of work that will devolve upon junction agents and the auditor.

The audit office system of accounting for freight traveling over only two lines will be described, based upon the use of a five part way-bill (Fig. 20) for each shipment. All of the parts are written simultaneously by the forwarding agent, and thus considerable labor and expense is saved to the lines handling the shipment.

In addition to the four parts used as original way-bill, expense bill, forwarding agent's file copy and forwarding line's audit copy, there is an additional copy which is furnished to the auditor of the line receiving the shipment. This may be sent to him by the forwarding agent, or the two audit copies may be sent to the "home" auditor, who will in turn forward the extra copy to the auditor of the "foreign" line.

If the shipment moves over three or more lines, the intermediate lines handling it should be furnished by the forwarding line, with a record of the shipments. This record may consist

Car Number _____ **FOREIGN WAY-BILL** Way-Bill Number **A** _____

Central Traction Co. ————— Eastern Traction Co.

When Consignee pays freight charges delivering agent will sign and give this expense bill to Consignee.

From _____ Consignor _____ Date _____ 190 _____

To _____ Via Junction _____

Consignor _____ Destination _____

| NO. PAGE(S) | DESCRIPTION OF ARTICLES | WEIGHT SUBJECT TO DUTY | RATE | FREIGHT REVENUE | ADVANCE CHARGES | PREPAID |
|----------------|-------------------------|---------------------------|------|--------------------|--------------------|---------|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | TOTALS, | | | | | |

Amount Prepaid.....

Received Payment.

Collected by _____ Sheet No. 2.

AGENT.
ORIGINAL FREIGHT BILL SHOULD ACCOMPANY ALL CLAIMS FOR OVER-CHARGE LOSS OR DAMAGE AND BE
PRESENTED WITHIN 5 DAYS FROM DATE OF SHIPMENT.

AGENT.

Car Number _____ FOREIGN WAY-BILL Way-Bill Number A _____

Central Traction Co.--Eastern Traction Co.

This W-B of freight must go with shipment to be held by delivering agent.

From _____ **Consignor** _____ **Date** _____ 190 _____

To----- **Via Junction**-----

Consignee _____ Destination _____

| No. PACKAGES | DESCRIPTION OF ARTICLES | WEIGHT SUBJECT TO CORRECTION | RATE | FREIGHT REVENUE | ADVANCE CHARGES | PREPAID |
|-----------------|-------------------------|---------------------------------|------|--------------------|--------------------|---------|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | TOTALS, - - | | | | | |

Amount Prepaid_____

Received Shipment as above.

Collected by _____ Sheet No. 1.

AGENT

CONSIGNEE

This blank used only in billing freight between stations on Central Traction Co. and Eastern Traction Co.

FIG. 20.—Actual size 8" wide by 6" high.

for computing daily earnings, including their prorata proportion of revenue earned on interline freight.

The audit office settlements between companies, for freight charges collected on interline shipments, are made on the basis

of agents' abstracts, supported by the copies of way-bills. In order that unnecessary duplication be avoided, it is usually agreed that the company upon whose line is located the final destination of a shipment, shall render a report to the line forwarding, and to all intermediate lines that handle it. The report is made up by the receiving agent in the following manner thus avoiding the necessity of rewriting the report in the auditors office.

Interline way-bills received are listed by the receiving agent, in his abstract of interline way-bills received. This abstract is written up daily. The agent keeps separate sheets for each line from which shipments are received, and lists the way-bills, grouping the shipments originating from each particular station, under the proper heading. Two or more impression copies of the abstract are made by the agent, dependent upon the number of lines over which shipments have traveled. These copies are sent to the auditor. After the auditor has verified the figures in the abstract, one of the copies is sent to each road affected. Accompanying the abstract is a recapitulation or settlement sheet (Fig. 21). These sheets are provided with columns for indicating the rateable proportion due each line that has handled the shipment. The settlement sheets are made up in the auditors office; the amount of revenue due each line is usually fixed upon a percentage basis, each road receiving the proportion to which it is entitled by reason of the mileage traversed by shipments. The division of revenue is sometimes further influenced by the inclusion of arbitrary terminal charges, bridge tolls, etc.

When interline way-bills are forwarded, the agent lists them, under destination headings, in his abstract of interline way-bills forwarded.

At the end of the month, columns are totaled, a recapitulation is made, and an impression copy of the abstract is forwarded to the auditor.

The auditor of the forwarding and of each intermediate line receives from the auditor of the receiving line, the report of interline way-bills received by the latter and proceeds to check its accuracy. If the auditor checking, is not on an intermediate line in this case, the checking may be accomplished by comparing with the report, his own agents' abstracts of interline

way-bills forwarded to the same stations which the receiving line reports. If the reports do not agree, the correct figures are found by reference to the copies of way-bills on file. The agent who has erred in listing way-bills in his records, or the auditor of the foreign line who has reported way-bills incorrectly, is notified of the mistake and requested to correct his own records.

The receiving line is held responsible for the collection of the proper revenue on way-bills received; if errors are found a correction notice is issued at once and the way-bill is reported at the correct figure in the monthly abstract. If errors are found in the advanced charges or total prepaid amount shown on way-bills, it is considered necessary to get the consent of the forwarding line, before making correction, however.

The settlements sheets (or division statements) are then examined in order to ascertain that the proper percentages have been used in making division of revenue. An "account current" is frequently made up by combining the division statements of the lines that do interline business, and settlement is then made by the line owing the larger amount paying the difference between the amount it owes and the amount due it from the connecting line. The actual payment of cash is made by drawing voucher or by authorizing draft to be made.

When errors are found in the abstracts and division statements rendered by receiving roads, a "statement of differences" (Fig. 22) embodying the errors found, is promptly furnished by the auditor of the line affected. If the statement of differences is accepted, the account is adjusted in the succeeding month, the present settlement not being delayed on this account.

For the purpose of having an additional check upon freight in transit, agents at stations which are junctions or connections with other lines are required to keep a record, commonly known as the "passing" record, (Fig. 23) of all shipments which pass the station enroute to a distant point, without being re-billed. For example, a shipment originating at a point on the Northern line travels on its original way-bill, over its own road, to the terminus of its connection, the Central line, thence over the entire length of the Central line to a point on its connecting road, the Southern line. The agents at the two termini of the Central road are required to keep a "passing record" of each

The passing record sheets are made out in triplicate, one being retained by the station agent and one each sent to the auditors of his own and the connecting line. Thus, the auditor of the central line has the passing record from the agents at his two termini, as well as the abstract of bills received, furnished by the auditor of the Southern line, to check against each other

FIG. 23.—Actual size 8" wide by 12" high.

The junction plan of settlement simplifies the accounting in the auditor's office and places more of the burden upon agents

at junction points. The plan was formerly used to a considerable extent by steam railroads and is still used by many inter-urban railroads, but the constant endeavor to rush freight to destination has brought about the closer relationship of connecting lines; the consideration of mutual interests has been instrumental in extending the use of the audit plan of settlement.

When the junction plan of settlement is followed, the freight is not sent through to destination accompanied by the way-bill made at its point of origin, but it is billed only to station at junction with the connecting line. In some respects, therefore, it resembles local way-billing and is such. If a through rate has been made, it will be shown on the way-bill but the amount charged for the line first handling it will be shown separately, and this amount will be considered by the local agents in reporting. If the shipment is such a one as illustrated in the preceding paragraphs, it will be billed by the Northern agent at originating point, only to the station where the Northern connects with the Central. The Central line agent will in turn bill it to the station connecting with the Southern, and the Southern will bill to destination. Settlement is effected between the junction agents of the lines. If the shipment has been prepaid through, the Northern line agent at the junction pays the Central line agent, the amount due for transportation beyond the Northern line; the Central line agent at connection with Southern line pays that agent the amount due for carriage over the Southern line. If, on the other hand, the shipment is forwarded "collect" the process is reversed and the Northern agent at junction collects the amount due his road when he delivers the shipment to the Central line agent. The agents' accounts will be cleared through the monthly account currents in the same manner as local charges are disposed of, the routine being similar. If one person acts as joint agent for two connecting lines, he handles the accounts and cash separately for each road, and conducts the junction settlements as if he were in reality two separate agents.

CHAPTER XI.

STATION RECORDS AND ACCOUNTS.

The station agent is a comparatively new factor in electric railway operation. When tickets were placed on sale and freight and express accepted for transportation, it was found necessary to have someone represent the railway company in its dealings with the traveling and shipping public. Each city and town traversed required its own local agent. As the business was frequently not sufficient to require the entire time of an agent it was found advisable, for the purpose of reducing expenses, to engage the services of local storekeepers to look after the railway's interests in small places. Regular agents who devote their entire time to the work, were employed at the larger points.

The system of station reports and accounts that has been put into effect by electric railways is quite simple, in order that it may be readily understood by the agents at small places, while it is flexible and gives good results at large terminals and junction stations.

At the more important points it is often found essential to have separate agents for the passenger and freight business. This does not make any change in the system of station accounting necessary, except that the freight or ticket agent, as the case may be, keeps only those accounts that relate to his line of business.

The sale of tickets and the accounting therefor constitute a large part of the work at most stations. There are several methods of reporting these sales, prescribed by auditors controlling the agents' accounting. One system involves the use of a station record book in which the sales are entered daily as made. The agent then makes a summary of the transactions at the end of the week or month, and forwards the report of totals, to the auditor. The cash is sent daily to the treasurer, with a memorandum stating briefly whether the money is the proceeds of local ticket sales, or other receipts. Sometimes this information is written upon the outside of the envelope containing the cash.

This plan has several admirable features, chief of which is the labor-saving advantage over the system of making detailed daily reports of sales. The ticket sales reports have to be checked but once a week or month by the auditor, and there is a similar reduction in agents' work. On the other hand, the daily system of reports is sometimes the only alternative under certain conditions.

Those railways that compile daily statements of the earnings of each separate division, need a basis for computing the earnings that is absolutely reliable and this is not always attained by using the memorandum of total daily sales accompanying cash remittances. In order that division earnings may be figured accurately, interdivision and interline sales must be prorated over the divisions and lines earning the revenue. This prorating can not be entrusted to agents if there is no way of verifying the accuracy of the figures before they are embodied in the auditor's reports of gross earnings. The value of daily earnings statements lies in their promptness, to a considerable extent, and this would be lost if it were necessary to wait for agents' week-end or month-end reports. The daily checking of ticket sales reports, by the auditor, is especially useful when untrained and inexperienced agents are in the service. Mistakes are called to their attention promptly, sometimes saving what would be a considerable monetary loss to the agent if he continued to sell a ticket at the wrong price for a week or a month.

The daily report of ticket sales is a form (Figs. 24) upon which are printed in geographical sequence, the names of local stations to which tickets are often sold, with blank spaces for the insertion of names not frequently used. The sheet is ruled in several columns which are headed "opening number," "closing number," "number sold," "rate," and "amount."

Agents are instructed to pay careful attention to ticket numbers and to sell them in consecutive order. The "opening" numbers, or the lowest number indicated on each kind of ticket in stock, is written upon the daily report form before the day's sales have begun. After the ticket window is closed for the day the lowest numbers then on hand are entered in the columns headed, "closing number." It is but a simple matter to subtract the opening from the closing numbers; these results being multiplied by the rates give the total value of tickets

TRACTION COMPANY
DAILY TICKET REPORT

| From | | Station | | | | | | 190 | | | | |
|-------------|------------------|----------|----------|----------|------|--------|-----------------|----------|----------|----------|------|--------|
| TO | CARD-SINGLE TRIP | | | | | | CARD-ROUND TRIP | | | | | |
| | Form | Com. No. | Clo. No. | No. Sold | Rate | Amount | Form | Com. No. | Clo. No. | No. Sold | Rate | Amount |
| Cass | S | | | | | | R T | | | | | |
| Allamore | S | | | | | | R T | | | | | |
| Augusta | S | | | | | | R T | | | | | |
| County Line | S | | | | | | R T | | | | | |
| Zionsville | S | | | | | | R T | | | | | |
| St. Clair | S | | | | | | R T | | | | | |
| Whitestown | S | | | | | | R T | | | | | |
| Holmes | S | | | | | | R T | | | | | |
| Ferriss | S | | | | | | R T | | | | | |
| Lebanon | S | | | | | | R T | | | | | |
| Stringtown | S | | | | | | R T | | | | | |
| Pike | S | | | | | | R T | | | | | |
| Mechanicsv | S | | | | | | R T | | | | | |
| Shimpton | S | | | | | | R T | | | | | |
| Antioch | S | | | | | | R T | | | | | |
| Frankfort | S | | | | | | R T | | | | | |
| Johnson | S | | | | | | R T | | | | | |
| Wild Creek | S | | | | | | R T | | | | | |
| Mulberry | S | | | | | | R T | | | | | |
| Wike | S | | | | | | R T | | | | | |
| Dayton | S | | | | | | R T | | | | | |
| Hatke | S | | | | | | R T | | | | | |
| Lafayette | S | | | | | | R T | | | | | |
| Stafford | S | | | | | | R T | | | | | |
| Bouth | S | | | | | | R T | | | | | |
| Dover | S | | | | | | R T | | | | | |
| Brown | S | | | | | | R T | | | | | |
| Shannondale | S | | | | | | R T | | | | | |
| Martins | S | | | | | | R T | | | | | |
| Boek | S | | | | | | R T | | | | | |
| Grimes | S | | | | | | R T | | | | | |
| | S | | | | | | R T | | | | | |
| | S | | | | | | R T | | | | | |
| | S | | | | | | R T | | | | | |
| | S | | | | | | R T | | | | | |
| Total -- | S | | | | | | R T | | | | | |

CARD LIMITED TICKETS

| TO | SINGLE TRIP | | | | | | ROUND TRIP | | | | | |
|------------|-------------|----------|----------|----------|------|--------|------------|----------|----------|----------|------|--------|
| | Form | Com. No. | Clo. No. | No. Sold | Rate | Amount | Form | Com. No. | Clo. No. | No. Sold | Rate | Amount |
| Cass | LS | | | | | | R | | | | | |
| Zionsville | LS | | | | | | R | | | | | |
| Whitestown | LS | | | | | | R | | | | | |
| Lebanon | LS | | | | | | LR | | | | | |
| Frankfort | LS | | | | | | LR | | | | | |
| Mulberry | LS | | | | | | LR | | | | | |
| Dayton | LS | | | | | | LR | | | | | |
| Lafayette | LS | | | | | | LR | | | | | |
| | LS | | | | | | LR | | | | | |
| | LS | | | | | | LR | | | | | |
| | LS | | | | | | LR | | | | | |
| Total -- | LS | | | | | | LR | | | | | |

FIG. 24.—(Front side)—Actual size 8" wide by 17" high.

ELECTRIC RAILWAY ACCOUNTING.

BOOK AND MISCELLANEOUS TICKETS

[illegible]

REPORT OF COUPON TICKETS SOLD

[illegible]

SUMMARY OF SALES

| | No-Sold | Amount |
|---------------------|---------|--------|
| Card Single Trip | | |
| .. Round Trip | | |
| Limited Single Trip | | |
| .. Round Trip | | |
| Form L | | |
| .. R L | | |
| .. L Half | | |
| .. R L .. | | |
| .. R A | | |
| .. R | | |
| .. H A | | |
| .. H F | | |
| Communtation C | | |
| School Book F | | |
| 800 Mile Modes | | |
| 1,000 Mile Book | | |
| Coupon Tickets | | |
| Special Cars | | |
| Total Sale | | |

AGENTS WILL SHOW DAILY COMMENCING AND CLOSING NUMBERS OF ALL TICKETS, WHETHER SALES OR NOT, USING CARE TO SEE THAT SALES ARE ENTERED IN PROPER COLUMN AND CORRECT AMOUNTS CARRIED TO SUMMARY OF SALES.

FIG. 24.—(Reverse side.)

sold. The baggage checks that have money value may be shown upon the report in the same manner as tickets. Space is provided for the summary, each class of tickets being totaled separately for the auditor's convenience in computing earnings.

When the report is sent to the auditor, the audit stubs of book and coupon tickets sold accompany it, for verification. The stock of miscellaneous coupon tickets on hand may also be shown by the agent on the report.

Interline ticket sales are usually made the basis of a separate report sheet which has spaces provided for the prorating of earnings over the lines interested. The through rate is shown by the agent, but the division is usually made in the auditor's office.

Reports of baggage handled are reported on sheets which are written up daily, but sent to the auditor's office only at the end of the month. Separate sheets are used to record the movement of interline baggage, particular care being used to account for all "excess" collections. As heretofore mentioned, the checks used for checking excess baggage, or baggage for which any charge is made, are reported on the ticket report. The collections for storage of baggage are accounted for by the audit stub of the receipt given the owner.

Freight and express records are also written up daily in the station agent's office and are totaled at the end of the period. He then makes a recapitulation of the figures and uses the aggregate amounts in making up his balance sheet. In addition to keeping the ordinary freight records, the agent must make a report of extraordinary conditions regarding freight handled. If freight is found to be missing, damaged or on hand without billing, a report of each case must be promptly made to the official in charge of the freight claims department.

If the station happens to be at a junction with connecting line, a record must be kept of all freight passing from one line to the other, careful attention being given to the condition of the freight as it passes through the station.

When freight is received at his station for shipment, it is the agent's duty to give the shipper a dray ticket or bill-of-lading receipt. Before the shipment is forwarded, a way-bill describing the merchandise and giving names of shipper and consignee,

weight and charges, is written, identifying the freight and accompanying it to destination. Additional copies of the way-bill are made, in order that one may be sent to the auditor and another retained at the station.

Cash received as the proceeds of ticket sales, freight charges, etc., is sent to the treasurer as often as may be found desirable. Usually the auditor issues instructions to each agent regarding the frequency of his remittances. The money is enclosed in a stout envelope, carefully sealed and sent to the treasurer through one of the trainmen, who receipts to the agent for the package. The amount of cash contained, and the kind of proceeds it represents, is written upon the outside of the envelope, unless it is thought more desirable to enclose a slip of paper giving this detail. If the auditor approves, the money collected by the agent may be deposited in a local bank, and a check for the amount sent to the treasurer. If one of the company's general depositories is located in the city, the resident agent is instructed to deposit his collections in the proper bank and send the duplicate deposit advice signed by the bank, to the treasurer's office.

The agent's cash book may be compared to a bank pass-book. As the pass-book is the account of the depositor with the bank so the station cash book is the account of the agent with the railway company. A daily entry of receipts is written upon the debit side. The way-bills are entered separately as collected, and the amount of each is placed in the column headed current month or previous month, according to the date of billing. Other columns headed baggage, tickets, etc., are used for making a record of cash received on those accounts. A miscellaneous column is provided for items not belonging under the other headings.

On the credit side of the cash book credit is taken for payments made on forwarded billing, in advance of its shipment. A column is also provided for entering the cash payments for freight "prepaid beyond."

Under the heading "cash remitted" the remittances are entered as often as made. Miscellaneous credits are shown in the column so headed.

The cash book is balanced each time a remittance is forwarded and the balance carried forward should tally with the amount of cash on hand. Sometimes it is the practice to make a re-

mittance for the exact amount collected to date, while in other cases a round sum is remitted daily.

The agent makes up a balance sheet daily, weekly or monthly according to the will of his superior accounting officer. This balance sheet or "account current" as it is commonly called, is a summary of the agent's transactions with the company, and is partly a recapitulation of the cash book totals. In making up the account he first enters the balance due the company or himself, from the previous month. The amount of freight and advance charges on freight received, amount received for prepaid charges on freight forwarded, baggage forwarded prepaid, baggage received collect, ticket sales and miscellaneous charges are entered upon the debit side. The amount of prepaid freight received and advance charges on freight forwarded, the remittances sent and balance due the company are shown as credits. The balance due the company is usually largely made up of uncollected bills for charges on freight. A detail statement listing the bills on hand and giving a brief statement of the reasons for their non-collection, accompanies the account current when it is sent to the auditor.

The entries on the account current that are not posted from the cash book are taken from the totals shown on freight received, freight forwarded, baggage received, and baggage forwarded reports. If these have been kept written up to date, it is a comparatively simple matter to post the items and balance the account current.



CHAPTER XII.

STATION AUDITS.

A large percentage of electric railway revenue passes through the hands of trainmen and station agents on its way to the treasury.

Many interurban railways sell passage tickets and accept freight at stations located in towns along their right-of-way, and their station agents in consequence handle large sums of money.

✓ The chief accounting officer exercises supervision over the station agents' accounts; he is charged with the duty of planning the system of accounting to be used, and of making a "continuous" audit of the agents' accounts.

The continuous or daily audit, however, must of necessity be confined to examination of the memoranda, records and reports sent by agents to the auditor's office.

While this audit acts as a sort of brake, and is effectual in correcting unintentional mistakes, it is far from complete. Large shortages in the accounts of a station agent can exist without any knowledge of it being had by the auditor, unless some slip or accident casts suspicion upon the agent.

The accounts in the station agents ledger are carefully watched by one of the auditor's competent assistants, and if an agent is not remitting promptly for the debits shown, the traveling auditor should be instructed to make a station audit.

Station audits should be made as frequently as possible, even though all conditions seem favorable; appearances are often deceitful, and even if no shortage exists, the traveling auditor can help the agent in many ways by giving him the benefit of some of his hard-earned experience.

The traveling auditor should be a man of strict integrity and good morals. If his knowledge of station accounts is supplemented by a good store of general accounting experience, his services will be all the more valuable.

One of the most important precepts he learns is to keep his

own counsel. The nature of his business is such that when instructed to audit a station, he should not inform anyone of his purpose—least of all the agent whose accounts are to be checked, or the trainmen on the line.

When the traveling auditor steps unexpectedly into a station, his first act is to count the cash. The agent is asked for all the funds on hand and the amount is at once verified in his presence.

An examination of the ticket stock is then made. The card tickets in the ticket case are first counted if the station is a busy one. These tickets are usually the stock from which sales are being made, and by counting them first, the business of the ticket office is interrupted as little as possible.

Coupon tickets, mileage books, and the entire supply of every kind of tickets is counted and an inventory made.

Baggage checks of intrinsic value, storage receipts and everything else sold by the agent is taken account of, in order that the audit may be complete.

It is customary to make superficial audits, in some cases, of stations considered "safe." Agents are usually under bond, and if the bonding company does not require frequent audits, the matter does not always receive careful attention.

When a new agent is succeeding the present incumbent, a certain amount of the work of counting is thrown upon the newcomer. For example, the traveling auditor will make a superficial check by counting cash on hand, and taking a list of the lowest numbers shown on the packages of each kind of tickets. A balance of the old agent's accounts is taken and if everything appears satisfactory, the traveling auditor does not count the ticket stock.

Instead of doing so, he has the new agent do the counting, and give him a receipt for the entire stock on hand.

If the station audited is a freight station, the preliminary procedure is the same, but instead of counting tickets the traveling auditor concerns himself with the uncollected bills and freight on hand, and the way-bills forwarded, not reported.

He is, of course, provided with a statement of the agents' account at the latest balance, as taken from the station agents' ledger. To this must be added the amount due on way-bills forwarded and received since the balance.

It is not always possible to ascertain the amount due from

REPORT OF EXAMINATION OF STOCK ON HAND AND ACCOUNTS

At Station, 190
 Ticket and Freight Agent succeeded by Tkt. & Frt. Agent.
TICKETS, BAGGAGE CHECKS, ETC.

| 190 | DR. | 190 | CR. |
|-----|---------|-----|--------------|
| | Balance | | Balance |
| | Sales | | Remittances |
| | Sales | | Remittances |
| | | | Cash paid to |
| | Overage | | Shortage |
| | Total | | Total |

FREIGHT AND EXPRESS

| | | | |
|--|-------------------|--|----------------------|
| | Balance | | Balance |
| | Received | | Prepaid Received |
| | Advances | | Remittances |
| | Prepaid Forwarded | | Cash paid to |
| | Corrections | | Bills On Hand (over) |
| | Overage | | Corrections |
| | Total | | Shortage |
| | Total | | Total |

Total of \$ REMARKS:

Tickets, Baggage Checks, Etc. Missing (over) are accounted for as follows:

| | |
|-------------------------------------|----------------------------|
| Ticket Dater (kind and condition) | Impression of Dating Stamp |
| Dater Ribbon (condition) | |
| Ticket Punches (kind) | |
| Size of Ticket Case, Tubes, Shelves | |
| Is Ticket Case large enough? | |
| | |
| | |

Remarks: (Bond Application, Instructions, Condition of Office, Etc.)

I certify that the above Statements are correct in every particular:

(Signed)

Dated at

190

FIG. 26.—Actual size 8½" wide by 13" high.

to examine dating stamps and take an impression upon the report he makes, it will be found that the results amply repay the slight effort required.

In order that records may be had of efficiency and carefulness on the part of agents, in the conduct of their offices, the audit report may include a general statement of the station conditions. If an agent is to be advanced to a more important station, the traveling auditor's reports will be largely instrumental in deciding as between several agents seemingly equally competent to handle a greater volume of business.

In order that the audit report may be complete, the traveling auditor makes a detailed list of the uncollected bills on hand, and the incoming agent acknowledges receipt of these, along with the ticket stock.

The audit report is signed by the traveling auditor who has made the examination, and it is filed, with all the receipts and memoranda connected with the audit, in the general offices of the accounting department.

"Eternal vigilance" is required to prevent errors, unintentional and otherwise, on the part of agents. One of the most perplexing problems to be solved is the alteration of way-bills and the collection of excessive charges. The agent may faithfully remit to the railway company, for all ticket sales and for all freight charges and still mulct shippers and consignees of large sums. Like the "short change" schemes practiced sometimes by conductors, its prevention depends largely upon the degree of watchfulness exercised by the public. If there is any reason to believe that such an irregularity exists, and also as a precautionary measure, the traveling auditor should make personal calls upon some of the shippers and receivers of freight in the towns where stations are located. The better class of business houses usually keep the freight receipts for several months or years, and by comparing some of the receipts with the same items in the agent's records, cases of extortion, if present, will be brought to light.

CHAPTER XIII.

DAMAGE CLAIMS.

The statistics comprised in the 1902 Government report of street and electric railways show that at that time less than one per cent. of the earnings of all lines were derived from freight and express business, and that even on the lines classified as fast, long interurbans, approximately seven-eighths of the gross were passenger earnings.

There have been important changes since then, but passenger earnings still form a very large percentage of electric railway revenue. It is naturally to be expected that the claims for injuries and damages to persons and baggage amount to more than freight and express claims.

Most of the office work in connection with the settlement of claims is taken care of in the claim department, but the accountant comes in touch with some features of it. He is interested in the records kept, and the form of reports used.

The report blanks are of various kinds. The ordinary accident report made by trainmen leads the list, which includes, among others, special forms to be used in reporting trouble on cars, such as ejectments or controversies over fares, and assaults by passengers or trainmen. Separate blanks are used in reporting accidents to employes at shops and other places, in making reports of stock killed, etc. The accidents are indexed by dates and in other ways found most valuable, in addition to the alphabetical list of persons connected with damage cases.

Station agents are provided with a form (Fig. 27) to be used in case baggage is delayed, as this frequently results in a claim for damages. The sheet has space at the top for full description of the baggage, its value, time shipped, and other data. This is followed by a form of receipt to be signed by the owner when baggage is located and delivered to him. The receipt shows the time and the condition of baggage when received. After the foregoing portions have been properly filled out, the agent

DELAYED BAGGAGE.

Name _____ Address _____ Station _____
 (No. Street and City.)
 Representing _____ Address _____
 Kind of baggage _____ How many pieces _____
 Shipped from _____ to _____ via _____
 On _____ 190 _____ Check No. _____
 Value, including contents \$ _____ Date _____ 190 _____

Received of — — — TRACTION COMPANY all of the above described baggage and contents in same conditions as when delivered to said Company, except as hereinafter stated.

Dated _____ 190 _____ A. M.

P. M.

Signed _____

AGENT'S REPORT.

Cause of delay _____

If damaged, describe condition _____

Forwarded to Claim Department _____ 190 _____ A. M.

P. M.

Agent _____

Received by Claim Department _____ 190 _____ A. M.

P. M.

By _____

FIG. 27.—Actual size 7½" wide by 11½" high.

writes his statement at the bottom of the sheet and forwards to the claim department to be used in case a claim is presented.

The accountant is sometimes required to furnish statistical reports of the operation of the claim department. These statements are usually made in comparative form, parallel columns containing figures for the present month and the same month of the preceding year. The kinds of accidents are classified under several dozen headings sometimes, and the amount paid out in claims under each head is shown separately. Included in the cost of settling claims are the salaries and traveling expenses of the claim adjuster and his assistants, the fees of attorneys and surgeons engaged upon damage cases and such miscellaneous items as court costs and witness fees. It is usually a matter of considerable interest to the claim adjuster to have a detailed monthly statement of all the charges against the accounts influenced by his department.

Frequently the policy of the company is to charge against expense each month a percentage of the gross earnings which is considered sufficient to take care of damage claims, when averaged for the year. When this is done there will be a difference between the actual amount expended as shown in the detailed reports furnished the claim department, and the amount charged to operating expense in the monthly accounts. The difference is carried in a reserve account, which is cleared at periodic intervals, or allowed to accrue for a considerable period of time in order to build up a strong reserve for future contingencies.

The rapid increase in the amount of freight and express handled by electric railways has brought a corresponding increase in the number of claims presented for overcharge, loss and damage.

The settlement of claims for overcharge consists chiefly of comparing rates, weight and classification billed, with the tariff in effect, and locating the responsibility for the error.

The station accounts referred to in investigation of these claims are ordinarily kept in the auditor's office, hence it is often the case that the entire settlement of overcharge claims devolves upon him.

The settlements of claims for loss and damage are so complex, involving the discipline of employes as well as the proper treat-

OVER, SHORT AND DAMAGE REPORT

| | | | |
|--|--|--|------------------------------------|
| Commence with No. ONE Agent's Number. | | 65- This report must not be regarded as an excuse for neglecting to use other means of rectifying discrepancies. | Dept. Freight & Express Office No. |
| First of Each Year | | | |

Station _____ 190.

The following freight is _____ at this Station from Train No. _____

Conductor _____ Car No. _____ Initial _____

Sealed or Fastened { West Side Door _____ East Side Door _____
 { South End Door _____ South End Door _____

Way-Bill No. _____ from _____ Station _____ 190.

| CONSIGNEE AND DESTINATION | | ARTICLES WAY BILLED | ALL NAMES | ALL NOTATIONS ON WAY-BILL |
|---------------------------|--|---------------------|-----------|---|
| AS WAY-BILLED | | | | |
| | | | | |
| | | | | |
| | | | | |
| AS RECEIVED | | ARTICLES RECEIVED | ALL NAMES | ARTICLE'S CYCLE OR SHORT, OR NATURE OF DAMAGE |
| | | | | |
| | | | | |
| | | | | |

Receiving Agent will answer all of the following questions that pertain to this Report, and send to the Office of the Supt. Freight and Express Traffic, —

1. By whom was Freight checked? _____
2. Was Car left at your Station, or in passing train? _____
3. From what Stations did Car contain Freight? _____
4. Do Marks indicate Shipper's address or show where Freight belongs? _____
5. What is your estimate of amount of Damage? _____
6. Has Consignee received Freight, and how receipted for? _____
7. What do you think is the cause for Over, Short or Damage? _____
8. What have you done to obtain disposition of property? _____
9. Will claim be presented for the above? _____

| | |
|--------------------|---------------|
| ----- Agent, ----- | Station ----- |
|--------------------|---------------|

NOTE The receiving Agent must make out this Report in Duplicate, mailing the Original to the Office of the Superintendent Freight and Express Traffic and Duplicates to the Forwarding Agent. The Forwarding Agent will answer the questions on the reverse side of this report.

FIG. 28.—(Front side)—Actual size 8½" wide by 11" high.

ment of claims for overcharge, loss and damage are all under the jurisdiction of the auditor, and for that reason a brief description of the plan followed will not be out of place.

Many claims are avoided by the use of a station agent's re-

port. It very frequently locates freight that has gone astray, and assists in tracing shipments that might otherwise be lost

OVER, SHORT AND DAMAGE REPORT

Station No. _____

No. _____

Supt. Freight & Express Traffic No. _____

INSTRUCTIONS.

1. Agents must study these instructions and carry them out to the letter.
2. When freight is over, short or damaged, the agent will immediately report on this blank to the Office of the Supt. Freight and Express Traffic, and forward Duplicate to Forwarding Agent, retaining an impression copy of Original on file in numerical order. If no press is used, written copies must be retained.
3. Articles over, which plainly belong at the station at which they are unloaded, may be delivered if consignee surrenders bill of lading or shipping receipt covering same, but great care must be exercised to collect a sufficient amount of money to cover the probable amount of charges on same. Such delivery must in every case be reported by letter to the Office of the Supt. Freight and Express Traffic, giving reference to over report number.
4. Articles over must not be forwarded from your station without permission from the Supt. Freight and Express Traffic. When deliverable property is found to be lost or over, the Office of the Supt. Freight and Express Traffic must be advised by *Telephone or mail*, in addition to this report.
5. Articles reported over, for which manifest is attached, must be reported to the Office of the Supt. Freight and Express Traffic, "Over or short freight accounted for," without delay, and proper notation made on station record of report.
6. Be very careful to note conditions of doors and locks, and in case car arrives with lock broken or bearing evidence of having been tampered with, detach them and send to the Office of the Supt. Freight and Express Traffic with report, resealing car with your station seal and keeping record of cars resealed.
7. Agents will be held personally responsible unless it shall appear that they have promptly and in accordance with instructions reported the facts at the time of the occurrence, also for any inaccuracies in reports or answers to questions.
8. Make all notations in ink and date them.

The Forwarding Agent will answer all of the questions below that pertain to this report and send to the Office of the Supt. Freight and Express Traffic by first paid mail.

1. Was Freight received from Consignor or Connecting Line? _____ Give condition.
 2. By whom and in what condition loaded? _____
 3. Into what car loaded? No _____ Initial _____
 4. By what Train and Conductor forwarded? Train No. _____ Conductor _____
 5. Give Seals or Fastenings { West Side Door _____ East Side Door _____
North End Door _____ South End Door _____
 6. Was Car in passing Train or loaded at Station? _____
 7. For what other Stations did Car contain Freight? _____
 8. What do you think is the cause for Over, Short or Damage? _____
 9. What have you done to obtain disposition? _____
- Agent _____ Station _____ 190 _____

REMARKS.

FIG. 28.—(Reverse side.)

or damaged. The report, which is known in railway parlance as the "O. S. & D." (over, short and damaged) (Figs. 28) report is made by the agent whenever and as soon as he finds that he

has received merchandise not intended for his station, when merchandise is short according to the billing received, or when a shipment has been received in damaged condition. The form provides for a full description of the freight, and its billing if received. A number of questions are printed upon the sheet, which are to be answered by the agent as far as he is able.

✓ These reports are received daily at the auditor's office (upon the supposition that he is acting as freight claim agent) and are examined for the purpose of comparing "overs" and "shorts." It will frequently be found that merchandise reported short on the report from one station will be reported "over" at another, the train crews having put off the goods at the wrong station. Instructions are sent to the "over" station to forward the freight at once, "free astray," to the station that is short. The freight is then delivered to the consignee and no claim results, unless the delay has been unreasonable.

When a claim is presented for loss or damage, the rules usually require that it shall be accompanied by a certified copy of the original invoice, showing the cost price of the merchandise, or if that is impossible, an affidavit to the effect that the freight had a certain value. It is also necessary for the claimant to produce the receipt for the freight as shipped. This receipt may be in the form of a dray ticket or a bill-of-lading.

Section twenty of the Hepburn act regulating interstate commerce provides that the carrier issuing the receipt or bill-of-lading shall be liable to the lawful holder thereof, and that the carrier issuing such receipt shall be entitled to recover from the carrier on whose line the loss or damage shall have been sustained, the amount of such loss or damage as it may be required to pay to the owners of the property.

This is the general practice of electric railways doing an intrastate business, as well as of roads covering wider territory.

When a claim reaches the auditor, the bill-of-lading or other receipt is carefully examined for the purpose of noting the conditions of the contract. It may be that it is a shipment of household goods or other merchandise that was "released" at an agreed valuation per hundred pounds. The merchandise may have been receipted for in bad order or as the "shipper's load and count." These are taken into consideration and the settlement of the claim is governed by the conditions under which the receipt was given.

When the claim is received, it is given a number and a postal card notification is sent to the claimant, advising him of the number for future correspondence, and that the claim is under investigation.

The claims are listed in a register or index-book that contains columns in which are entered the auditor's claim number, claimant's claim number (if any), date received, from whom received, claimant's name and address, nature of claim and amount claimed. The way-bill covering the shipment is fully described by date, number, etc. Additional columns are provided for the insertion of the number and amount of the voucher when paid.

The papers received from the claimant are attached to a heavy manila letter-size sheet, and as the investigation progresses and papers accumulate they are fastened one on top of the other. The claim number and some data regarding the claim are shown on the back of the manila sheet.

In starting an investigation the "O. S. and D." reports are examined, and it may be that this gives sufficient information to effect settlement of the claim at once. When this is not the case, the original way-bill is next examined, and after it is compared with the receipt and no discrepancies located, inquiry is made of the crew that handled the shipment.

One of the aids in tracing shipments is the custom of having the train crews place their initials and car- or train-number on each way-bill handled. The trainmen are usually required to note the condition of freight not in apparent good order, on the face of the way-bill, also.

The agents at junction or transfer points should be required to keep a record of the condition of freight as it is transferred or passes their stations. This "passing record" is made in duplicate or triplicate, and the auditor's copy is referred to in tracing lost or damaged freight passing junction points. By the use of forwarding, junction and receiving agents' reports and the trainmen's notations on the way-bill there is established a complete chain of evidence to be used in making investigations of claims.

The chain is broken sometimes, it is true, but humanity is not infallible, and the element of personal responsibility enters very largely into the handling of freight at stations and on cars.

One of the most expensive mistakes made by station agents

is the delivery of "shipper's order-notify" freight without collecting the amount of the invoice from the consignee. The instructions to agents, upon this subject in general, are so precise that an agent will not intentionally act contrary to them. The mistake usually occurs by an agent receiving goods marked for a consignee who calls for the shipment in haste; the agent has not received billing and does not know that the cost is to be collected upon delivery. It follows, therefore, that the instructions regarding non-delivery of freight without billing are quite as important and should be as closely followed as those governing "notify" shipments.

CHAPTER XIV.

PURCHASING AND STORES ACCOUNTS.

The quantity of material and supplies that is used by even a moderate-size road during the course of a year is vast, and the purchase and distribution must be handled in a systematic manner to prevent leaks.

Store-rooms are established at convenient places for the storage of goods purchased, and their distribution as needed.

The storekeeper is supposed to keep a careful watch upon the stock on hand and to notify the purchasing agent when material will be needed. For this purpose a "memo. of stock required" (Fig. 28 A) is filled out by the stock checker who notices a shortage in a bin containing supplies. If the storekeeper finds that he has not previously notified the purchasing department of the need for this material, he fills out a requisition on the purchasing agent, for the quantity required.

When a department head is in need of material not in stock at the store-room he fills out a requisition (Fig. 29) for the material needed.

The requisition may be likened to the keystone of an arch, for without it the system of accounting for material and supplies would not be found complete. The requisition upon the purchasing agent is printed with spaces for date, quantity and kind of supplies required, quantity on hand, and the purpose for which it is intended. Columns are left for the use of the purchasing agent in inserting the date ordered, order number and from whom purchased. The requisitions are approved by the general manager or other official so authorized, and the purchasing agent proceeds to get quotations, if it is not an emergency order or one for material already quoted.

When the purchasing agent has decided to place an order for material or supplies, he writes the order in triplicate on a form (Fig. 30) used for this purpose. The original is sent to the firm from whom the purchase is made. This sheet gives shipping instructions, states quantity and items ordered, and

the terms of the purchase. The orders are consecutively numbered and the shipper is requested to use the order number in rendering bill. If the company has certain rules in effect covering the purchase of material, these are also stated for the guidance of the seller. The duplicate of the order is kept on file in the purchasing agent's office; from time to time the file

MEMORANDUM OF STOCK REQUIRED.

Date _____ 190_____

Storekeeper will replenish stock as follows:

| QUANTITY | ITEMS | ON HAND |
|----------|-------|---------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

FIG. 28A.—Actual size 6" wide by 4" high.

(ORIGINAL)

— — — TRACTION CO.

Requisition on Purchasing Agent Date _____

Please have delivered to _____ at _____

the following material: Signed _____

Requisition N^o _____

Approved, _____

GEN'L. SUPT.

| QUANTITY | ITEMS | TO BE USED FOR | ON HAND | DATE ORDERED | FROM | ORDER NO. |
|----------|-------|----------------|---------|--------------|------|-----------|
| | | | | | | |
| | | | | | | |
| | | | | | | |

FIG. 29.—Actual size 8½" wide by 5" high.

is examined, and a postal card tracer is sent after shipments that are overdue. The triplicate of the order is sent to the storekeeper or department head who made requisition for the material ordered.

The bill for material sent to the store-room, or a duplicate copy of it, is given to the storekeeper, for checking. This bill and the triplicate of the order are handed to the checker, who

counts, weighs or measures the material, notes on the order triplicate that the material has been received and returns both papers to the stock clerk. The stock clerk then fills out the form "material received" (Fig. 31) which is thereupon signed by the storekeeper. This form may be dispensed with in some cases, but it is found quite useful. It may be made up in triplicate and one copy retained at the store-room to be used

| -----Company. | | | | | |
|---|---|-------|--|--|---|
| ORIGINAL. | PURCHASING DEPARTMENT. | | | | |
| -----190----- | | | | | |
| <p>Ship items as shown, by-----f.o.b.-----</p> <p>upon conditions named below, to-----</p> <p>Mail invoice in duplicate for each shipment to General Offices, -----</p> <p>Render Monthly Statement of Account promptly on first of each month.</p> <p>Positively no allowance for Boxing or Cartage.</p> <p>NOTE: Shipment on this order will be considered as an acceptance thereof upon the conditions stated herein.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 40%; text-align: left;">QUANTITY</th> <th style="width: 60%; text-align: left;">ITEMS</th> </tr> <tr> <td style="height: 100px; border-right: 1px solid black;"></td> <td></td> </tr> </table> <p><i>Prepay all Freight Charges.</i></p> | QUANTITY | ITEMS | | | <p>Put these Numbers on Invoices, Shipping Memo's and Packages.</p> <p>Order A.-----</p> <p>Requisition -----</p> |
| QUANTITY | ITEMS | | | | |
| | | | | | |
| PLEASE ACKNOWLEDGE ORDER BY RETURN MAIL. | | | | | |
| <p>If shipment cannot be made promptly notify us at once. Do not make partial shipments of above unless instructed by us. We reserve the right to cancel this order if not filled within a reasonable time.</p> <p>This order must not be filled at higher prices than last quoted or charged without advice.</p> <p>We will not accept this material if not exactly as specified.</p> | <p style="text-align: center;">-----COMPANY.</p> <p>By '-----</p> <p style="text-align: right;">PURCHASING AGENT.</p> | | | | |

FIG. 30.—Actual size 7" wide by 9" high.

by the stock clerk for making entries in the stock record. One of the impression copies is sent to the purchasing agent in order that he may know material has been received. The other copy will be found advantageous in keeping the shops advised of the receipt of material that may be badly needed.

When the Material Received report has been checked with the order triplicate, the latter is signed by the storekeeper and returned to the purchasing agent. It should be noted, in

_____ Company.
 DUPLICATE. PURCHASING DEPARTMENT. _____190

| | | |
|---|-------|-------------------------------------|
| Ship items as shown, by _____ f.o.b. _____ upon conditions named below, to _____ Shipping date requested _____ Invoice requested _____ | | Order A. _____ Requisition _____ |
| QUANTITY | ITEMS | |
| <hr/> | | |

_____ Company.
 TRIPLICATE. PURCHASING DEPARTMENT. _____190

| | | |
|---|-------|-------------------------------------|
| Ship items as shown, by _____ f.o.b. _____ upon conditions named below, to _____ <small>If material is received in damaged condition, note same on this blank. Report partial shipment on special blank provided for that purpose. When shipment is complete sign this certificate and return same to the office of the Purchasing Agent.</small> | | Order A. _____ Requisition _____ |
| QUANTITY ORDERED | ITEMS | RECEIVED QUANTITY DATE |
| <hr/> | | |
| I Certify that the above material has been received in good order (except as noted herein) on the dates indicated in last column, and that the quantities indicated in the first column are correct. | | |

FIG. 30.—Actual size 7" wide by 9" high.

It seems hardly necessary to keep a ledger for material and supplies, unless accuracy can not be secured by the use of a well-ordered stock record. The latter, kept by the storekeeper, under the auditor's supervision, or by the auditor's clerks,

The following material received _____ 190...

I certify that the above material has been received in good order (except as noted hereon) in quantities indicated in the first column.

FIG. 31.—Actual size 12" wide by 10" high.

In order that the stock clerk may have before him at all times the danger point or "low stock" mark for each class of material, a minimum is set by the storekeeper or purchasing



Storekeeper will deliver the following to

[illegible]

FIG. 33.—Actual size 8" wide by 4½" high.

When material is disbursed upon requisitions, entries are made upon the stock record sheets, at the lines marked "out," of the quantities. The cost price shown on the stock record sheet is then entered upon the requisition, which is thereafter used in making up the monthly report of disbursements.

It will be noted that the total of the stock record sheets, if posted up to date, constitute at any given period, a so-called "perpetual inventory." This, however, is somewhat of a misnomer for the reason that inaccuracies in the records may have developed without the knowledge of the storekeeper or his clerks. Even though all purchases have been entered as received and material disbursed through requisitions just as carefully accounted for in the stock record, leaks may have occurred through theft or waste. When the actual inventory is taken at the end of the year, a glaring discrepancy may be found between the actual count and the figures shown on the stock record. One railroad that takes an inventory at very rare intervals claims to have secured the effect of a perpetual inventory, with the stock record, by having the stock on hand verified when the quantity of a certain kind of material is increased or decreased by receipts or disbursement. Thus, if a half-dozen shovels are sent out on requisition, the floorman or stock clerk notes the number still in stock and compares that with the figure shown in the stock record. This plan is a good check upon active stock, but the periodical inventory embraces everything, and is hard to dispense with.

In order that proper entry for disbursements of material and supplies may be made upon the general books of the company, a recapitulation of the requisitions honored by storekeepers during the month, is made. The total charge to each account is ascertained by grouping the requisitions and totaling them. A journal entry may then be made, crediting the general material and supplies account with the aggregate of the charges to individual accounts.

The secondhand material and scrap should be considered in a discussion of the material and supplies accounts. One or more ledger accounts are opened and as material is scrapped the estimated junk value is charged to the secondhand material and scrap account, and carried as an asset until sold. If the material has been scrapped to make way for new, the account charged with the new work is usually credited with the value of the old material. If there is found to be an error in the valuation of the material, when sale is effected, the difference may be adjusted through the "Profit and Loss" account if not applicable to the current year's operation.

CHAPTER XV.

SHOP RECORDS.

Considerable difficulty is frequently met with in deciding the kind of records that shall be kept at electric railway shops. Many kinds of statistics may be compiled, and discrimination must be exercised in judging between those that are valuable and others that are not worth the expense entailed in keeping them up.

Ordinary car repairs are a constant factor in the shop routine; construction work and the repair of damages caused by accidents are comparatively unusual.

Cars may be inspected daily, or nightly, by shop- and barn-men and yet minor defects, such as a rattling window sash or a burned out wire, be overlooked. The "defect card," (Fig. 34) when properly filled out by trainmen supplements the work of inspectors. If a car has but recently come into the shops and is required quickly, before inspection has been completed, examination of the defect card will locate any serious trouble. The card is provided with space for inserting the date, car number and time car was used by trainmen reporting. The important items such as brakes, trolley, motors, windows, etc., are listed, with spaces following, for insertion of defect, if any. The motor-man and conductor sign the card jointly, as one might notice a defect not apparent to the other. Some railways require trainmen to sign one of these cards each time a car is turned in. This has its advantages, and the claim department may find the "O. K." of the crew as to the car's condition, of assistance in locating responsibility for an accident. On the other hand, it is sometimes contended that too much work is entailed in handling a card for each car every day and that no card should be used unless a defect is apparent.

The usual examination of cars by shop inspectors may be reported to foremen or master mechanics on a blank form which has spaces provided for noting the kind of repairs made to each car, whether lubricated or not, and signature of the inspector.

Material that is used in car repairing is drawn out of store-

CAR REPAIRS..... Car No. for the Month of 190.....

Kind of Car..... Length of Body..... Length Over Bumpers..... Kind of Road..... Number of Seats..... Number of Size of Body Glass..... Vehicle Class..... Register.....

| Date | Labor | Tools | Motor | | Hood | | Lighting Apparatus | | Trunk | | Air Compressor | | Number of Size of Body Glass | | Vehicle Class | | Remarks |
|------|-------|-------|-------|-----|-------|-----|--------------------|-----|-------|-----|----------------|-----|------------------------------|-----|---------------|--|---------|
| | | | Use | Bar | Motor | Bar | Light | Bar | Trunk | Bar | Compressor | Bar | Compressor | Bar | Compressor | | |
| 1 | | | | | | | | | | | | | | | | | |
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FIG. 35.—Actual size 20" wide by 15" high.

Car No. _____

WHEEL RECORD.

| | | | | |
|-------------------------|--|--|--|--|
| WHEEL No. | | | | |
| KIND | | | | |
| PUT ON | | | | |
| REMOVED | | | | |
| FROM CAR | | | | |
| CAUSE OF REMOVAL | | | | |
| BACK MILEAGE | | | | |
| 190 | | | | |
| January Mileage | | | | |
| February " | | | | |
| March " | | | | |
| April " | | | | |
| May " | | | | |
| June " | | | | |
| July " | | | | |
| August " | | | | |
| September " | | | | |
| October " | | | | |
| November " | | | | |
| December " | | | | |
| TOTAL " | | | | |
| January " | | | | |
| February " | | | | |
| March " | | | | |
| April " | | | | |
| May " | | | | |
| June " | | | | |
| July " | | | | |
| August " | | | | |
| September " | | | | |
| October " | | | | |
| November " | | | | |
| December " | | | | |
| GRAND TOTAL " | | | | |
| DISPOSITION | | | | |

FIG. 36.—Actual size 14" wide by 11" high.

structing new cars, building parts, and making extraordinary repairs, the job number, properly used, is valuable. The master mechanic desiring to have a complete cost record of a particular piece of work makes his wish known to the auditor who thereupon authorizes the account or job number to be used, and advises the departments interested, particularly store-room, so that they will not be unfamiliar with the account.

As all material and labor used is properly charged to the account number, the total cost is readily ascertained. No account is taken, in computing this job cost, of the amount of power or light used, the time of machines, general superintendence and "overhead" expense. If the shops were making material to be sold these would have to be reckoned with, as would interest on the investment. The cost ascertained is not, strictly speaking, aggregate cost, but is a cost that is useful for compara-

[illegible]

FIG. 37.—Actual size 11" wide by 9" high.

tive purposes, it being understood that the general expense has not been prorated over the several jobs.

The effect of job numbers is, in a sense, sometimes secured by means of the individual car record (Fig. 35). A sheet containing spaces for full description of the numbered car, the kind of repairs, dates of repairs and other detail, is kept for each car. When this method is used the workmen usually fill out a card for each car repaired, showing the time spent and the amount of material used.

Wheels and armatures constitute a prolific source of expense, and necessitate the compilation of records of their life and efficiency. Wheels are frequently purchased upon a guaranteed mileage basis. Each wheel must then be numbered and its history recorded upon a wheel record sheet (Fig. 36). If wheels are put on or removed at terminal points it will be necessary to have division shopmen report these changes, by wheel numbers.

material used. The report also lists the number of cars that are undergoing repairs not completed, the total number and kind of cars ready for immediate use, the number of men employed on day and night shifts, and the number of cars washed, oiled and inspected. The foremen's reports (Fig. 38) are kept on file by the master mechanic and from them is made up a daily report to the general manager or transportation official. The master mechanic's report groups the figures relating to the different shops and only shows separately, by individual shops, the number of cars available.

A record of employees is kept in several departments of the electric railway, and particularly in the departments handling

| | | | | | |
|------------------------------|--|-------------------|--|----------------|------------------|
| <i>Name</i> | | | | | |
| <i>Address</i> | | | | | |
| <i>Occupation</i> | | <i>Age</i> | | <i>Married</i> | |
| <i>Time Key</i> | | <i>Department</i> | | | |
| <i>Wage Charge, Date</i> | | | | | <i>Resigned</i> |
| <i>Rate</i> | | | | | <i>Dismissed</i> |
| <i>Record and Discipline</i> | | | | | |
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FIG. 39.

large numbers of men, such as the transportation and motive power departments. A sheet or card (Fig. 39) is kept for each employe, and filed alphabetically. In addition to a general description of the employe, the dates and amounts of wage changes, record and discipline are entered upon the card. These are referred to when new applications are received, or when an increase of wages is under consideration.

Many other kinds of records may be kept, not all of which, can be used to advantage in every shop and office.

There may be a historical record of equipment, showing the accidents, repairs, and truck and motor changes that have taken place.

Mileage records of trucks and of the axles upon which motors are suspended may be kept; trolley wheels and brake shoes are sometimes guaranteed to give a certain mileage, and lubricants are also bought upon the same basis.

The mileage records are, therefore, an essential part of the motive power statistics. The transportation department should furnish a daily report of car mileage, compiled possibly from the dispatchers' train sheets, for interurban cars, and from division superintendents' reports, for city cars.

CHAPTER XVI.

AMUSEMENT PARK ACCOUNTS.

The amusement parks which are located on the railway company's right of way or at its terminals, are the means of attracting considerable travel, and on this account their construction and operation are encouraged.

If, for some reason, a separate organization constructs, equips and operates the park it is likely that the railway company will not be directly interested in the project further than subscribing to some of the stock, or making a contract of some kind with the park company.

In the latter event the agreement commonly provides for an inspection of the park or railway company's accounts by the other party to the contract in order that the returns reported may be verified by the creditor company's accountant.

It sometimes happens that the railway company owns the park and wishes to be rid of the trouble of operating it. A contract or lease which provides for certain improvements to be made by the lessor or lessee, for power to be furnished, the admission to be charged, and the kind of restrictions to be placed upon the park operation, is executed with a park operator. The only duty then devolving upon the railway accountant is to see that moneys are properly collected or disbursed and other terms of the agreement carried out.

If the contract provides that the railway company shall receive a certain proportion of the concessionaires' receipts, it is advisable to require daily detailed reports of this business.

If the railway company operating a park conducts a refreshment booth or restaurant, it is necessary to throw every safeguard possible around the handling of supplies, or the loss from waste and theft may be a serious one. An Illinois electric railway has found the following plan quite effective in auditing the receipts of this character.

A blank form (Fig. 40) is used by waiters in taking orders from customers. The order is presented by the waiter to the em-

The gate admissions are checked by using rolls of tickets which are consecutively numbered, and the same plan is used for concert and theatre performances. The checker counts the persons leaving the grounds or buildings after the performance and compares their number with the sales denoted by the closing numbers of tickets, plus the free admissions.

The broad question involved in the accounting for amusement parks and dining and sleeping car service is the effect upon income account. By some accountants it is considered advisable to include the total revenue from all such sources in the railway's gross earnings, and to charge operating expenses with the entire cost of maintaining and operating these features. X

The Interstate Commerce Commission segregates the operations of this character and classes all operations "for which specific arbitraries or allowances are covered in the rate, for special services other than rail transportation, also operations designed or used to furnish products or services not directly connected with rail transportation," as "Outside Operations." ✓ For each operating feature of this kind, a separate account is to be kept for revenue and for expense, the net results of which are carried direct, as one item, to income account, as an addition or deduction as the case may be.

The system of accounting prescribed for interstate railways, as above mentioned, requires that the revenue account of each outside operation shall be credited with all revenue applicable to the particular operation in question. The expense account of each of these accounts is to be charged with the cost of maintaining and operating, including the supervision and taxes, of the outside operation. The revenue account does not include credits due the outside operation from the railway itself, but such credits for commodities or services furnished the carrier for the benefit of its own operations, are deducted from the expense account of the outside operation, and balanced by charges to the operating expense accounts of the railway.

There are so many arguments that can be used for both of the foregoing treatments of park accounts and analogous features of operation, that it is not practicable to attempt to illumine the subject by discussion of illustrative cases, in the space at our disposal. Some accountants will have good reasons for wishing to credit the railway's earnings and charge its operating

expenses, with the total receipts and expenses of parks and similar operations. Others will prefer using the Interstate Commerce plan of carrying the net result into income account, as an addition or deduction. In any event the course to be pursued will be influenced by the local conditions or the decision of authorities having jurisdiction over the railway company's accounting.

In order that the park business, when conducted entirely by the railway company, may be handled in an intelligent manner it is essential that a detail account be kept of all receipts and disbursements. While it is not expected that each attraction shall show a profit or even be self-sustaining, the manager who is provided with a clear statement of the financial condition of the park, at frequent intervals, is enabled to apply remedies that will result in a much better showing at the end of the park season.

The first season of the park's operation is usually a trying one. The management has no precedent to guide it in that particular case, and the use of comparative reports is not possible, for the reason that there are no figures with which to make comparison. A comparison of the receipts with the expenses of each class of attraction must suffice—if additional statements showing the various maintenance costs are furnished, the situation is well known at all times. The maintenance of the property during the closed season is an integral part of the park expense, and should be taken into account when considering net results.

A Pennsylvania company operating several electric railway properties has used a system of park accounting which is comprehensive and furnishes sufficient detail to satisfy the demands of the management in most cases. The general park account is separated into many subsidiary accounts, which may be carried in a Park Ledger, the controlling account only appearing in the general ledger.

An income account is opened for each revenue-producing portion of the park, and to this account is credited the gross amount received by the railway company as its revenue. These accounts comprise the features operated exclusively by the company, as well as the privileges let to outsiders upon various bases.

The expense accounts included in this plan of accounting are twenty-two in number, and are designated as follows:

Maintenance.—

- Maintenance of Buildings and Grounds.
- Maintenance of Landscape Gardening.
- Maintenance of Furniture and Fixtures.
- Maintenance of Park Furnishings.
- Maintenance of Park Equipment and Tools.
- Maintenance of Electric Plant.

Operation.—

- Purchased Power.
- Policing and Cleaning of Grounds.
- Band Concerts.
- Special Attractions.
- Wages of Miscellaneous Amusement Employees.
- Miscellaneous Amusement Expenses.
- Miscellaneous Park Expenses.
- Theatre Supplies and Expenses.
- Restaurant Supplies and Expenses.
- Salaries of Managers and Clerks.
- General Office Expenses.
- Stable Expenses.
- Advertising and Attractions.
- Damages.
- Rent of Land and Buildings.
- Insurance.

Some companies will subdivide these accounts quite extensively if the park business is of sufficient importance to warrant it. For example, the accounts for miscellaneous park and amusement expenses may be split up so that the expense directly incurred by the operation of a particular attraction may be ascertained without having to analyze the larger accounts. Of course, the indirect expense must be prorated over all the attractions in order to know the entire cost of operating each feature.

Some of the park equipment is of such a character that it must be practically renewed each season. The cost of these can hardly be considered a part of the construction cost, as they are not in the nature of permanent assets. Their renewal is

considered a part of the up-keep of the property, and included in the cost of maintenance.

The acquisition of a piece of real estate and its conversion into a modern fully-equipped amusement park involve the expenditure of much time and money. The Pennsylvania company alluded to has used the following accounts to include the cost of purchasing and equipping park properties. These are considered a part of the capital accounts and may be merged into the general construction and equipment accounts of the railway, if the railway owns the property.

The construction and equipment accounts have the following titles:

- Organization.
- Engineering and Superintendence.
- Real Estate.
- Buildings and Grounds.
- Landscape Gardening.
- Furniture and Fixtures.
- Park Furnishings.
- Park Equipment and Tools.
- Electric Plant.
- Interest and Discount.
- Miscellaneous.

CHAPTER XVII.

VOUCHER DISBURSEMENTS.

One of the chief duties of railway auditors is the careful oversight of disbursements, and the accounting therefor.

The examination or audit is intended to act as a preventive of erroneous payments and is supposed to take place before the money is actually disbursed. There are occasional exceptions to the general rule, but in the majority of cases, the certification of the auditor is necessary before the money can be paid out. Frequently, also, the approval of one or more other company officials is necessary, and the by-laws governing the corporation's acts may designate what officials are given this power of approval.

In order that the certification and approval of the proper officials may be shown and that the accounts to be paid may be handled in a uniform manner, there has been brought into use a system of disbursing and accounting which is known in railway parlance as "the voucher system."

The Century dictionary defines a voucher as a "book, paper, document or stamp which serves to prove the truth of accounts, . . . a receipt or other written evidence of the payment of money."

As is to be expected, there are many forms of the voucher in use. Some railways use a voucher that is certified and approved by the company officials, and when it reaches the treasurer for payment, he draws an ordinary bank check in favor of the payee. The voucher and check are then sent to the payee. In order that the voucher will be properly signed and returned it is customary to enclose a letter or printed slip requesting that this be done. This voucher comes within the definition given above and there are, no doubt, cases wherein it is the most practicable solution of the problem. However, many railways have used for years a "voucher" which is a combination of voucher and check. In the following description it will be noted that this form has a number of advantages.

VOUCHER DISBURSEMENTS.

115

| | |
|---|------------|
| DEPOSIT IN ANY BANK FOR COLLECTION. | |
| IN FULL FOR ABOVE ACCOUNT. | Date 190__ |
| RECEIVED OF | |
| TRACTION COMPANY | |
| TREASURER'S NO. | AUDITOR. |
| APPROVED FOR PAYMENT | |
| CERTIFIED CORRECT. | |
| Payable at FIRST NATIONAL BANK, CHICAGO, when Receipt is Properly Dated and Signed. | |
| Date of Bill | |
| AUDIT NO. | |
| TO | |
| TRACTION CO. | |
| DR. | |

| | |
|------------------------------------|---|
| VOUCHER NO. | ACCOUNTS PAYABLE TRACTION COMPANY FAVOR OF |
| REQUESTED IN 190__ \$ | |
| INTERNAL AND SUPPLY | |
| Repair House | |
| Repair of Wagon | |
| MAINTENANCE OF WAGON AND EQUIPMENT | |
| MAINTENANCE OF EQUIPMENT | |
| OPERATION OF POWER PLANT | |
| OPERATION OF CARS | |
| GENERAL EXPENSES | |
| MISCELLANEOUS | |

The voucher (Fig. 41) that is used as an illustration, is a sheet of paper approximately nine by sixteen inches, perforated in the middle so that the two halves may be readily separated. In several respects the printing on the two portions of the voucher are identical. The points of difference lie in the form of receipt that is printed on one part, and the spaces for distribution of charges that are printed upon the other. The parts will be designated, respectively, as the "check portion" and the "audit portion."

When the voucher is written by the stenographer, it is folded at the perforation before insertion in the typewriting machine, carbon paper is used, and the parts printed alike are filled in with one writing. The amount is then written in the receipt part of the check portion, and the voucher is ready for the auditor's examination.

The bills being paid are slipped inside the fold, loose, and accompany the voucher in its course from officer to officer approving. When approvals are completed, the voucher is given a number and the two parts are separated. The audit portion remains in the office of the auditor, while the check portion is given to the treasurer to be sent to the payee.

Considerable care is exercised by the auditor and department chiefs in preventing the loss of bills received, and the duplication of payments. When a bill for material and supplies, which constitute a large part of the charges, is received, the purchasing agent compares it with his duplicate of the order, gives the bill a serial number for its future identification and approves the charge for quantity, price and terms, all of which may be included in a rubber stamp impression on the face of the invoice. The bills are then sent to the auditor, who sends them to the proper officials for approval, keeping a record to be referred to from time to time. If bills are not approved and returned promptly for payment, tracers will be sent after them.

Each department keeps a record of all bills passed, in a book or card file. If the latter method is used, the card has the name of the payee at its top, followed by a description of the bill, and the date it was approved and sent to the auditor. The record is referred to whenever a bill is passed, in order that duplicate approvals may be avoided.

The auditor's clerks in charge of the vouchering must be keen,

vigilant, and absolutely trustworthy, for upon them lies considerable responsibility. Each bill as received, approved, from department heads, is examined for errors in calculation. If material is bought at delivered prices and transportation charges have not been prepaid, the amount paid must be taken into consideration. The accounts must be examined in order that charges standing against individuals and companies may be deducted in making settlements.

A careful watch is kept to prevent the same bill being vouchered twice. The vouchers are indexed as drawn, and this index is constantly referred to by the voucher clerks. The index may be quite simple, merely an alphabetical record of the numbered vouchers, or may be elaborated into an account with each company making a charge against the railway. The latter method involves considerable work, and may be dispensed with if an index of vouchered bills is properly maintained.

There are some payments of rental and similar periodical items for which bills are not received. In order that the regular payment of these may not be overlooked, the auditor keeps a "tickler" record which is referred to at frequent intervals.

When the voucher has been written up, a distribution of the charges, compiled from the accompanying bills, is written upon the back of the voucher, in the spaces provided for this purpose.

The auditor's method of numbering may be monthly, yearly or otherwise, but in any event, the vouchers must run consecutively, no numbers being missed or duplicated. The voucher should also be as free from erasure or alteration as a bank check.

The bills paid are attached permanently by pasting or otherwise, to the audit portion of the voucher, which is then entered in the voucher register (Fig. 42): This is a book ruled with horizontal lines for names of payees, and having several vertical columns upon the page. The number of the voucher, name, short description and total amount are first entered. Across the page are columns headed with names of ledger accounts, or names of subsidiary ledgers, with a column or two left blank for sundry accounts. The purpose of these columns is chiefly to minimize the amount of ledger posting that is required.

On the same line in which the total amount of the voucher is entered, the distribution of its charges as shown on the back of the voucher are entered in the several columns.

While the voucher-and-check voucher illustrated is used to a considerable extent by steam and electric railways, and

[illegible]

The New York negotiable instruments law, provides in Article II, Section 20, that "An instrument to be negotiable must contain an unconditional promise or order to pay a certain sum in money." It will be noted that the wording of voucher illustrated on page 115, states that it is payable upon condition that the receipt has been properly dated and signed.

“Whereas the receipt on deposit of non-negotiable voucher checks has brought much annoyance and expense to the banks

ELECTRIC RAILWAY ACCOUNTING.

(Such form of voucher as may be desired.)

Fold here

NOTICE.—The endorsement on the reverse of this voucher is assumed to be conclusive evidence of the payment of the above accounts. Any alterations or erasures will render the voucher invalid. If any information is desired return the voucher to

FIG. 43.—(Face.)

ENDORSEMENTS

Fold here

THE

Philadelphia.

COMPANY

190

THE

NATIONAL BANK.

Pay to the order of

\$

Dollars,

For the accounts as shown within.

THE

COMPANY.

FIG. 43.—(Outside)—Actual size 8½" wide by 7½" high.

receiving and collecting the same, as well as increased and undetermined liabilities, and it has therefore become necessary to reconsider the matter of receiving such voucher checks on deposit, and so to revise the system as to require that depositors shall use for purposes of deposit only voucher checks formed in such acceptable form as to be free from any question as to negotiability. Therefore be it resolved that this Association approve and adopt the following form (Fig. 43) unrestricted as to any requisites of payment beyond the ordinary commercial endorsement, as a general form suitable for negotiable voucher checks, and recommends its use and adoption."

CHAPTER XVIII.

THE PAY-ROLL.

There are two methods of paying employes, commonly used by electric railways, each plan having its warm supporters. These consist of payment by cash and by pay-roll check or draft; a brief outline will be given, of the mannner of procedure with the two systems.

A rather novel idea in paying part of the employes is used by an electric railway in Colorado. The trainmen taking out a car in the morning register the time upon a trip sheet, and when the day's run is completed, the closing time is also shown. An employe delegated as checker, certifies to the correctness of the time entered upon the sheet. The motorman and conductor at the end of each day calculate the number of hours on duty during the day, enter the rates per hour at which they are paid, and figure the amount of wages due each of them, all of which is duly written upon the trip sheet. The conductor then pays himself and the motorman out of the money he has collected during the day, making proper report of the amount deducted from his gross receipts. It has been claimed by the users of this method of payment that it has eliminated disputes regarding the amount of pay received, and has put a stop to garnishment proceedings. It is not thought, however, that the plan will find many advocates. Trainmen are not ordinarily very good accountants, and various other objections may reasonably be urged against the system.

Some railways paying in cash pay the money out of the cash drawer as employes present themselves, counting it out in the presence of the persons paid. Others use an envelope for each employe, placing the money therein, and writing the employe's name and the amount paid on the outside.

When envelopes are used, they are written up from the pay-rolls, and a sum of cash equal in amount to the total pay-roll, in the proper denominations of coin and currency to facilitate distribution, is drawn from the bank. When two persons are

filling the envelopes, a check upon the work is had if both count the money. One places the money on the envelope, the other re-counts it before placing inside the envelope. When the work is completed and the money found to balance, the envelopes are sealed.

The payment in cash on a road of any considerable size requires the use of a pay-car which is sent to the various division headquarters. The employes must leave their work even if the pay-car comes at the busiest hour of the day, unless the schedule is arranged for long layovers. For this and other reasons the pay-car has become obsolete on many railways and preference

Date.....190.....

Conductor and Motorman's Time Card.

| CAR NO. | TIME ON AND OFF | NO. HOURS | LINE |
|---------|-----------------|-----------|------|
| | ON | | |
| | OFF | | |
| | ON | | |
| | OFF | | |
| | ON | | |
| | OFF | | |
| | TOTAL HOURS | | |

.....Conductor

.....Motorman

FIG. 44.—Actual size $5\frac{1}{4}$ " wide by $3\frac{1}{4}$ " high.

is given to the plan of paying employes by check. The pay-car is found indispensable, however, when new lines are being constructed through rough country where there are poor banking facilities, and an aversion on the part of storekeepers, to cashing checks.

The completed pay-roll, as ready for payment is a summary of calculations, which have their beginning in the daily time sheet for each gang, crew, or individual.

The time of trainmen may be recorded on a daily slip for each man, if desired. This may be a small, pocket size blank which the trainman writes up. The form (Fig. 44) contains spaces for the date, car number, time on and off, number of hours and line

or division on which he has worked. His signature is affixed and the time slip is handed to the local or division official having jurisdiction over the car crew. The superintendent O. K's the time and other data shown and forwards the several slips to the general offices where they are summarized on sheets or in a pay-roll book which is ruled with lines for the employe's names, and as many columns as there are days in the pay-roll period. The number of hours is totaled in an additional column; this multiplied by the rate paid gives the sum used when writing up the pay-roll sheet.

Trainmen's time may be written on sheets or in small time-books, with several names on each page if the individual time slip is not used. Trackmen, linemen, shopmen, and other employes may be conveniently grouped in gangs or crews for the

| Report of _____ | | Gang. For _____ | | 190 | | | | |
|-----------------|--------------|-----------------|----------|-----------------|-----------|---------------|-----------|----------|
| Employee | No. of Hours | Rate | Reported | Arrived on Work | Left Work | Hours on Work | Work Done | Location |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| REMARKS: | | | | | | | | |

FIG. 45.—Actual size 9" wide by 5" high.

purpose of timekeeping. When this is done, time sheets with spaces for names of each man in the crew, are used. The time sheet (Fig. 45) is made the basis of a daily report by the foreman, who keeps the time of his men, under ordinary operating conditions. The sheet may combine with the time record, a report of the material handled, unusual weather conditions, and other data.

In addition to the time record, a report is made upon the same sheet, of the kind of work engaged in, in order that the time of employes may be distributed among the expense or other accounts affected.

Each department forwards the original time records to the auditor, unless the pay-roll sheets are written in the departments. The pay-roll sheet is usually of considerable size, in order that spaces for the payees' signatures may be provided, as well as

the names, kind of employment, time worked, rate, total pay, deductions and net amount due. Unless the distribution of charges to the various accounts is made in a separate statement, each pay-roll sheet may conveniently bear its own distribution on the back. The lines may be numbered the same on front and back. The reverse side is provided with a number of columns for distribution to the several accounts; when these are finally summarized, the total charge to each account is secured, and the grand total balances with the amount of the pay-roll.

A journal entry charging the accounts included in the pay-roll summary, designates a liability by crediting an account called Pay-rolls or Labor Payable. When check is drawn for the total roll and payments are made, the liability ceases to exist and the ledger account is debited with the amount.

In addition to the Labor Payable account a ledger account is frequently opened to take care of the unclaimed wages, which are transferred to hold over or special rolls and held for a long period, awaiting claimants.

When construction work is under way, timekeepers are frequently employed. Foremen are usually kept quite busy at these times, without having the additional burden of time-keeping. The timekeeper can look after a large number of men, and disputes are not so likely to arise if the men feel that their time is being carefully kept by a man employed solely for that purpose. Timekeepers should, of course, be trustworthy men. Unless it is absolutely unavoidable, the payment of employes should not be entrusted to the men who keep the time. While collusion may not be thought of in one case out of a great many, the absence of opportunity for manipulation is a "consummation devoutly to be wished" by the railway auditor.

A careful examination of the pay-roll sheets is made in the office of the auditor. Calculations are verified by the use of wage tables and calculating machines, and every endeavor is exerted to prevent errors. The number of men employed is carefully checked with previous rolls in order to prevent the inclusion of "straw" men or "dummies." Rates of pay are likewise compared with preceding ones, and the changes noted are checked against the letters of authority that have been received.

The letter of authority for changes in the pay-roll is used to notify the auditor of the differences to be expected. Separate spaces are provided for noting the changes in the rates paid, and of increases or decreases in the number of men employed. Comparison is made with previous pay-roll, increases or decreases being shown, the sheet is signed by the department chief and probably approved by the operating executive.

The form of check or pay-roll draft used is largely a matter of individual taste. Sometimes it is drawn payable to the bearer, while again it may be payable to order. In the latter event the endorsement of the payee, on the check, constitutes a receipt which is additional to the signature on the pay-roll. The check is usually printed on a high grade of paper, that has a "safety" texture, preventing easy erasure. In order that the check can not be forged by photography, a tinted device or monogram may be engraved upon a separate plate, in the manner prescribed for stock certificates by some stock exchanges. To prevent "raising" a limit is sometimes printed upon the check, specifying the highest amount for which the check can be drawn. Sometimes, also, a clause requiring that the check shall be presented for payment within a certain period is added, so that the number of checks outstanding may be reduced.

Employees discharged are usually given "time orders" in order that they will not be required to wait until the regular pay-day, but can secure their money at once. These are sometimes paid with a special form of check and handled on separate pay-rolls. When checks are sent to the employees discharged it is not considered advisable to send the pay-roll sheets for signature, and a printed letter, with space for receipt, is sent, requesting that signature be attached and the sheet returned. These receipts and similar ones used in cases wherein the employees on one pay-roll sheet are widely scattered, are placed with the signed rolls, completing the file of "vouchers" for pay-roll disbursements.

CHAPTER XIX.

INTEREST, TAXES AND DIVIDENDS.

The operating expenses of an electric railway are paid, to a considerable extent, out of its current revenues, month by month. The pay-roll has usually been paid by the middle of the following month, and a large portion of the other expense is by that time, vouchered and taken into account.

The interest, dividends, taxes and other fixed charges are paid at less frequent intervals, which necessitates adjusting book entries. Monthly or yearly statements of the income account are not complete until the amount of fixed charges that have accrued for the period have been included.

Interest is ordinarily of two kinds, that on funded debt and floating debt. The evidence of these debts frequently consists of bonds, the interest on which is payable semi-annually, and notes given for money borrowed, and supplies, equipment, or other values received.

The interest on funded debt that has accrued during the period is shown as a deduction from income in the published statements. A journal entry is made monthly for all the fixed charges affecting income account, which have accrued during the month, the liability accounts being credited with the amounts of these accruals.

Interest on floating debt that has been incurred in connection with operation is deducted from income, but the interest on advancements for construction purposes, is separately treated. The A. S. & I. Ry. A. A. classification provides that interest incurred in financing construction, as well as discount on bonds sold, shall be considered items of construction cost.

Taxes are also included in the monthly deductions from income, and as they usually vary from year to year, and are paid some time after they accrue, it is necessary to estimate as nearly as possible the amount accrued each month, and to make adjustments when the exact figures are known.

In time past there has been considerable diversity of opinion

among accountants, regarding the disposition of the item of taxes in preparing railway financial statements. All agreed that taxes should be charged against income during the year for which they were assessed, regardless of the dates when paid, but there was not the same unanimity as to whether taxes should be included in operating expenses or grouped with bond interest and other fixed charges.

The latter method is more widely used, and in a published analysis of the Southern Railway's report for the year 1906, a writer comments as follows: "The company lumps operating expenses and taxes together—the reason for this is not known. In some cases, like that of the Illinois Central, whose taxes consist of a seven per cent. tax on its gross earnings, these taxes might be considered as analogous to an operating expense. Usually, however, they are considered like interest on the funded debt, a fixed charge."

The Standard form of Report for Electric Railways, which was approved by the Street Railway Accountants Assn. of America, at Detroit in 1902 and adopted as standard by the National Association of Railroad Commissioners at Portland, Maine, in 1903, groups taxes with other fixed charges that are deducted from income.

In the system of accounting prescribed by the Interstate Commerce Commission, taxes of every description are segregated from operating expenses. The only charges in the nature of taxes included in operating expenses are assessments for highways, sidewalks, sewers and the like which are carried to the appropriate accounts in operating expenses, construction or betterments as the case may require. Upon the other hand a prominent American firm of accountants recommended the inclusion of taxes in railway operating expenses and made the following explanation in support of their action.

"Taxes should be considered as a separate expense account under the heading of general expenses and not as a fixed charge. A fixed charge is properly a guaranteed return on invested capital, being specifically represented (1) by interest on mortgage bonds, and (2) by guaranteed interest return on any other class of interest-bearing securities, said interest return being always in the nature of a fixed or guaranteed percentage, such as interest on debentures or interest on certain classes of preferred stock."

Taxes may be separated, for the purpose of this discussion, into two general classes. The first of these shall be termed, for convenience, "property" tax, consisting of taxes upon all kinds of property owned, such as real estate, track, rolling stock, cash, securities, etc. Broadly speaking, the tax assessed upon property owned is not affected by the fluctuations in the volume of traffic, or in other words, by the earnings of the property. In this respect it may be likened to the interest on funded debt, which remains constant, regardless of the fact that many trains be discontinued or rates reduced, and earnings thus show wide variations. It may happen, however, that a changed rate or assessment may cause a large difference in the amount of tax for the year.

Operating expenses in detail, and the relation of their total to the operating revenue of a property are sometimes considered an indication of relative operating efficiency; if operating expenses are cumbered with taxes, efficiency is apt to be misjudged to some extent when totals are considered without reference to details.

An accountant meets this theory with the objection that taxes can be influenced by the operating management in many cases. He cites the following example. The railway company rents, at Smithtown, a station building and grounds, valued at \$5000, for \$40 a month, which is charged to operating expenses. The management decides to buy the property, does so, eliminates the rental payment, and henceforth pays a property tax of \$100 a year, which is grouped with other fixed charges as a deduction from income, when, as he states, it should be properly considered a part of the operating expenses.

The example he cites may be used to illustrate another phase of the same subject. The company under consideration builds and buys station buildings at many other places besides Smithtown, and in securing funds for the purpose, puts out an issue of bonds whose interest is thereafter a fixed charge of the company. The increased bond interest lessens operating expenses (station rentals) as does the ownership of other property, but the interest on funded debt is not in any sense considered as operating expenses.

The second kind of tax is that which is assessed upon earnings or volume of traffic. This is not affected by the method that

has been used in financing the property to the same extent as the tax assessed upon property owned, and the amount of the tax is practically the same, whether the company owns or leases portions of its property. In sharp contrast to "property" tax, earnings affect the amount assessed, and for this reason the tax is similar in some respects to those operating expenses which are sensitive to variations in traffic.

Frequently, however, the "tax" upon earnings takes a different form from that levied by municipalities, and may be a charge made by the company owning the terminal, for the use of tracks and stations at terminal points. If the gross earnings include the tax or terminal charge which has been earned, the amount is charged against operating expenses when paid for terminal facilities. Some accountants do not wish to include this portion of the fare collected, in earnings. One reason is that the State might thus receive a tax twice upon the same earnings, once upon the earnings of the company owning the terminal and again upon the earnings of the company paying for terminal facilities.

It does not necessarily follow that the method of accounting shall be changed on that account. The writer is familiar with an instance which occurred in an eastern state illustrating the point. The system of accounting in use required that the total fare collected be included in the gross earnings of the company using the terminal facilities, but for tax purposes the amount paid the terminal-owning company was set out in reports to the State board as a deduction from gross earnings. The propriety of this action was admitted, and the state officials allowed the deduction.

The amount of dividends to be paid is frequently not decided upon until after the close of the fiscal year. There are cases, however, when dividends are paid by a lessee company, upon certain classes of stock of subsidiary companies.

In the latter event the dividends are considered a part of the rental of the leased lines, and the amount accrued each month is grouped with the other fixed charges deducted from income.

CHAPTER XX.

ADDITIONS AND BETTERMENTS.

The accountant has little difficulty in deciding how expenditures for additions to road and equipment shall be handled in the accounts. If a branch line is constructed or some additional rolling stock purchased to take care of increased traffic, the assets of the company are increased thereby, and the cost of the additions are carried into the capital accounts.

A different problem is met in betterments or reconstruction. For example, 60-pound rail may be replaced by rail weighing 80 pounds to the yard, and the ties be renewed, causing considerable expenditure for material and the labor applying it. Or a light wooden bridge may be replaced by heavy steel girders on concrete piers and abutments.

Thos. L. Greene lays down as an axiom, in "Corporation Finance," that "no additions to the property should be considered betterments and charged to capital, unless they increase the productivity or earning capacity of the plant," and this is generally considered a good working rule. x

Not all the cost of new and more costly construction replacing inadequate road and equipment is carried to capital accounts, but an amount sufficient to represent the increased property investment is so treated. The usual plan of ascertaining the proportion chargeable to each account is to find the difference in cost of the types of construction represented. Thus, the amount chargeable to capital account in the heavier track construction mentioned, would be the difference between the cost of the 60-lb. rail and the 80-lb. rail which replaced it. The remainder of the cost of new rail is then charged to operating expenses under the proper renewals account, and the proceeds received from the sale of the old rails are credited to the same account.

If the financial policy of the company requires that part of the cost of betterments be deducted from income or surplus, the foregoing plan may still be used to determine the amount that

is chargeable to expenses. The important feature of accounting for additions and betterments, after the line of demarcation between them and operating expenses has been drawn, is to secure a clear record of the transactions affecting the accounts.

The engineering department usually makes an estimate of the cost of a proposed piece of work, and these estimates of authorized undertakings reach the office of the auditor, who thereupon issues job order numbers for each. If the work undertaken is of some magnitude sufficient sub-titles or numbers are provided to take care of all the detail that will be required.

The labor and material are charged to these accounts as used and during the progress of the work, the auditor keeps in touch with the cost records, in order that expenditures in excess of estimates may be called to the attention of the proper officials.

The detail figures are frequently referred to later, when comparisons are being made of the costs of different types of construction and of the same type under different conditions.

CHAPTER XXI.

CAR MILES, CAR HOURS AND OTHER UNITS.

One of the most widely considered of the tests used to determine operating efficiency is the ratio that operating expense bears to earnings. The very fact that operating expense ordinarily absorbs more than one-half of the earnings has made the fluctuations in the percentage seem of striking importance to the casual investigator.

The careful examination of details for the purpose of ascertaining efficiency and comparing the reports of different properties, has resulted in the use of various units, some of which will be briefly mentioned in the following pages.

A small cost unit that is widely used is the car mile. While the passenger mile is a much smaller unit, the difficulty and expense of compiling statistics based upon it, have prevented its use to any great extent.

The car mile is one of the most important units used by steam and electric railways. The steam roads have not had the troublesome electric railway problem of deciding the status of "trailer" miles as the steam locomotive can not be likened to the electric motor car carrying passengers. The electric locomotive, as a tractive vehicle, comes in the same category as the steam tractor, but the use of motor passenger cars is far more prevalent in electric railway operation.

If the car mileage unit is used to determine the power cost, it follows that the trailer, when practically a mere extension of the motor passenger car, is not considered in computing the mileage. If motor-cars are run in trains, with multiple unit control, the trailer is no longer a trailer in the sense ordinarily considered, and the train mile may be substituted as the unit of cost. The weight of cars and the consequent size of motors is a factor to be considered in the power cost, for the per mile cost of a single-truck city car compared with that of a large high-speed interurban car and trailer will give startling results.

Mileage statistics are used to a large extent in judging the worth of different makes of car-equipment parts. Trolley wheels, car wheels and brake shoes are sometimes bought upon a mileage basis, or with guaranteed service. It is also desirable to know what the working life of axles, motors, etc., has been in individual cases.

The gross earnings and operating expenses per car mile are interesting, and if the local conditions are given careful consideration these statistics may be found of value in indicating where traffic requires stimulation or expenses curtailment.

The various uses to which the statistics are put have their effect upon the methods used in compilation. The mileage of city cars may be had from the reports of starters, barn foremen, superintendents or conductors. If a starter reports mileage when the car starts out on a trip, there may be discrepancies in the reports, caused by the fact that cars get blocked, detour, and in other ways do not follow the schedule. The conductor stays with the car during all its wanderings and his reports are consequently more likely to be accurate.

The mileage of interurban cars may be compiled from the dispatchers' train-sheets if these are used. If not, some one of the plans for obtaining city mileage may be used. In order that the accuracy of the statistics may be tested, it is well to have some different general check upon the figures. The regular schedule mileage may be compared with the division or line totals shown, and striking differences investigated.

Interurban cars that use the tracks of the city company in entering a terminal are sometimes charged as rental a percentage of the fares collected or of the cost of maintaining track and line, within the city limits. If the city power is used it will be necessary to deduct the mileage made upon city tracks from total mileage, to determine the power-cost per mile.

The "dead" mileage, or mileage made by cars between car-houses and terminals is not usually productive of revenue and for that reason it is sometimes omitted. The non-revenue feature is offset by so many other considerations that the mileage can not be ignored if accurate results are to be secured. The wages of the train crew start with the movement of the car, and the consumption of power is concurrent with the first turn of the controller handle. The equipment records would be

incomplete if dead mileage were omitted, hence it should be taken into careful account.

The car-hour is a unit that is widely used by electric railways. One of the reasons advocated for its use is that wages of the crew continue even though the car is blocked and is not making any mileage, hence the per-hour cost of operation is the more satisfactory unit of expense. On the other hand, earnings stop when the car stops, and earnings per mile is more representative than per hour.

In considering the value of either of the units mentioned, the speed of the cars is a factor that has much to do with the results secured. For example, a car making a fifteen mile trip in one hour is speeded up so that it makes the trip in forty minutes; it carries many more passengers and has much greater earnings during the course of one-hour's travel, with no increase in trainmen's wages and comparatively little other expense additional to that previously incurred in making one trip in one hour.

The total number of hours during which each car operates may be ascertained by having conductors report the trips made and the time out on each trip. If the motormen's time cards are compared with the motor-car-hours reported by conductors errors may be readily located, for the differences should be but nominal. The schedule and make-up of trains are also checked with the car hours reported, in order to ascertain the number of hours each car of every class is in service. The hours that interurban cars are in operation may be computed from dispatchers' train sheets, as in the case of car mileage calculations.

The gross earnings per mile of road is a unit that was used to some extent in the 1902 census report on electric railways. This unit is an interesting one as it shows the density of traffic, which commonly varies with the density of population that is tributary to the railway.

In Brockway's book on Electric Railway Accounting mention is made of two other units sometimes used. These are the "per-seating capacity" and "per-capita" units. It is explained that the ascertaining of the former unit "requires much calculation of the schedule and can at its best be used only in the work known as traffic curves, which is a plan sometimes used to show the traffic throughout a day, and in connection with

it the cars provided to take care of the business. The process is shown by means of curves and the seating capacity unit is employed to show how closely the service comes to the traffic. It can hardly be used with any satisfaction in a statement. It may be arrived at, if desired, by multiplying the number of trips of each kind of car by the seats provided in them."

The per-capita unit of city lines whose transient and permanent population is fairly well known may be more closely approximated than the same unit of interurban railway earnings. There is much variation of opinion regarding the extent to which tributary territory should be included in estimating the earnings per capita of population. One interurban railway may operate through a sparsely settled territory and have as its terminals cities of considerable size. Another may run through a territory containing a number of small towns at frequent intervals and with good turnpikes enabling the farming population residing in a broad belt to easily reach the line of railway. The problems of estimating the percentage of the population of city terminals, and of the width of the belt on either side of the railway, to be considered in compiling per-capita statistics, are complicated by local conditions, and each case must be judged upon its own merits.

The cost of carrying a ton one mile, commonly known as the ton mile cost is a unit that is found valuable in determining the proper rate to be charged for the service. The tonnage statistics of freight handled may be compiled from the station agents' reports. If the weight of equipment is included in tonnage movement, an approximation of the weight of each car must be had; an estimate of the average weight per passenger is used if the statistics include the movement of passenger traffic.

An electric railway in New York State which desired to reduce the entire traffic of the road, including passenger, freight and work-train service, to a ton-mile basis, used the actual weight of each car multiplied by its mileage, and estimated the weight of passengers at 135 pounds each. The freight tonnage was compiled from the ordinary reports of this business. It is generally considered that the expense involved in preparing statistics of this kind is greater than the value of the resulting information, and the illustration is merely used to show an extreme case of statistical tabulation.

The car day is a larger unit that is sometimes found useful. When used in connection with daily statements of earnings, the number of cars required to earn the revenue is shown. The comparison of earnings with previous days' reports is made more interesting if the accompanying table of cars or car-days is at hand to throw light upon the operating conditions. The car day is an arbitrary length of time which varies in actual practice. It is determined by the schedule, and the average length of time that cars are in service. A fair average on an interurban road is probably 18 hours; the larger city lines lengthen this somewhat.

The standard unit of electrical energy is the watt-hour which is defined as "a current of one ampere flowing under pressure of one volt for one hour." This unit being so small, the kilowatt-hour, representing one thousand watt-hours, is used in computing the quantity of power produced at power plants, and its cost. It is quite an important unit to electric railways and in a sense may be likened to the locomotive-mileage statistics used by steam railways. The meters and switchboards at power plants furnish data regarding quantity produced. The total cost of operating power plants, and the mileage made by cars in service are used in connection with the power quantity figures in order to determine the average cost per kilowatt-hour and the power required to operate one car one mile. When power is transmitted to sub-stations and there converted into a different current, it is desirable to ascertain the cost of each kind of current. It is therefore necessary to separate the cost of operating generating power stations from that of converting stations in order that these costs may be accurately secured.

When an attempt is made to separate the cost of operating expenses for each line or division of the railway it is quite important to secure accurate power data. If one power-house produces power for several divisions, the switchboard will likely be provided with meters for each division of line, and, knowing the cost per kilowatt produced, it is a simple matter to figure the power cost.

There are so many items of expense that must of necessity be prorated upon an arbitrary basis, that the compilation of divisional statistics of operating expenses is usually unsatisfactory. The expense of tabulating the items is also considered

in determining the propriety of keeping accounts of this kind. It follows that when a large proportion of the expense must be divided upon some such basis as the ratio borne by the division's earnings or mileage to the total earnings or mileage, the resulting figure is neither accurate nor scientific.

CHAPTER XXII.

GRAPHIC STATISTICS.

The railway's operations are so diversified and its property is so widely scattered that it is only through the medium of a comprehensive system of reports that the management is kept fully advised of the details of operation and of the changes in values.

The reports consist in part of the statements rendered by the heads of departments at more or less frequent intervals. For example, the superintendent of transportation may make a daily report of the unusual incidents in connection with car operation, and the claim adjuster a report of the accidents each day and the progress made in settlement of claims. These stories of daily operation show in concise form the features of interest to the executive officials, and the files of reports are often referred to for explanation of items in the statistical statements furnished by the accounting department.

The preparation of statistical reports, or the "statements of results expressed in figures," form one of the principal duties of the chief accounting officer. From the volume of reports received in his office must be compiled those statistics which will show in graphic form all that the management wishes to know.

The statistics or figures themselves have little value unless set out in such form that the mind grasps their meaning and comprehends their significance. Sometimes the form of presentation suggests the real relation of the figures, while again there must be a complete written explanation of the connecting circumstances in order that the statistics may be understood.

The knowledge that certain events have taken place and results been attained is interesting but this should not be the ultimate end considered in the preparation of statistics.

It is likely that one of the reasons the accounting department has been thought an expensive rather than a revenue-producing department is the lack of attention that has been given to the comparative worth and worthlessness of statistical tabulations.

Vast sums are spent annually in the preparation of statistics which are examined superficially, if at all, by the persons to whom they are furnished, while the same energy might better be expended in compiling that valuable class of statistics which illumine errors of the past, and chart the course of future progress.

The true worth of statistics lies in their capacity to act as searchlights upon past events; the management that is provided with a clear summary of previous occurrences, good and bad, is "thrice armed" for future action.

The accountant comes into such intimate contact with details relating to the company's transactions, and is so accustomed to reading history in columns of figures, that his trained eye grasps the significance of the facts represented by what appear to others but dry repetitions of numbers. He should be eternally vigilant and call promptly to the attention of the proper officials, those statistics that indicate something is wrong in the operating results or in any other feature of the company's affairs.

Railway statistics are commonly grouped in the two classes designated as Operating and Traffic. One of the important points to be decided and one that continually bobs up for fresh decision, is the importance and relative value of units of comparison. The accountant is not always given "carte blanche" instructions for operating his department, but is sometimes confined to a predetermined salary list for his employees. If his operations are not thus restricted, a proper pride in his work causes him to consider carefully the relation between the worth of the statistics and the cost of compiling them.

It is sometimes found to be the case that there no longer exists the need for a report that was first asked for by a department official some months previous. The auditor has issued instructions to his clerks to prepare monthly reports of the particular statistics desired, and does not know that after the first one or two had been carefully examined, the others had been pigeonholed by the official who was at one time interested in the figures. A careful watch for cases of this kind will enable the auditor to eliminate "deadwood" and get the real value of his clerical force.

It is much easier to group small units into the kinds of statements desired than to separate items that are buried in a wilder-

ness of detail. For this reason, a general plan of future action must be kept in mind in order that statistics may be furnished as required and without undue delay.

Passenger traffic is of such a uniform character as regards the cost of carrying each unit, that it does not permit of the detailed analyses which are made of the freight traffic. Steam railways have found commodity statistics of considerable value in determining the cost of moving the traffic and of the proper rates to be charged.

The commodity statistics and tonnage statistics, which are used in ascertaining the cost of handling are compiled from the abstracts of way-bills forwarded and received. There are various methods used in arriving at the ton-mile cost. There is the "commercial" ton-mile which considers the movement of revenue freight only, and ignores the movement of "company" shipments. The "net" ton-mile is the name used to distinguish the unit secured by including company and revenue freight, but not including the weights of the cars themselves. The inclusion of the weight of equipment in the calculations gives the unit known as the "gross" ton-mile. If the movement of a particular class of freight forms a large percentage of the traffic it may be found useful to compile commodity ton-mile statistics. When the cost of handling that particular traffic has been found, it may show that the business is being handled at a loss or that the rates may be reduced for the purpose of securing more of the business from other sources. One of the reasons the ordinary ton-mile has been found inadequate is its inaccuracy in specific cases; the commodity ton-mile overcomes this defect.

One of the most graphic methods of presenting statistics is had by the use of parallel columns of figures. This is sometimes called the "deadly parallel" plan for it pits the results of period against period and of department against department. The light of publicity is shed with good effect when comparisons are obtained in this manner. The usual plan is to compare the result of one period with that of a like preceding period. The statement of daily earnings shows comparison with the same day of the previous year; monthly reports of earnings and expenses are compared with results of the same month of the year preceding. The plan is followed still further by using four parallel columns of figures on monthly statements.

In this case the third and fourth columns show results of periods covering several months of the current and preceding years.

In order that the auditor may keep in touch with conditions from day to day, before formal statements are drawn off, statistical books may be arranged to show comparisons of results. This is accomplished by having the books ruled with parallel columns in which the numbers are written. The statistics relating to like periods are entered in columns parallel, and there is a continuous comparison to be had by looking over the record books.

Red ink, or ink of any contrasting color may be used to good effect in statistical statements. Unless no objection is had

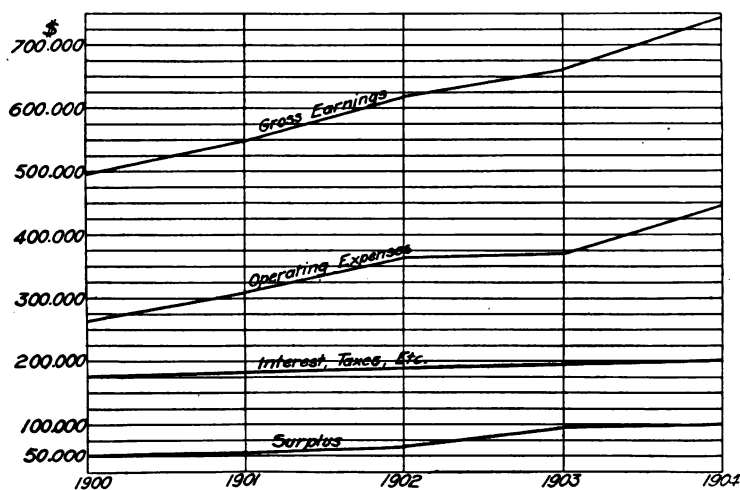


CHART 1.

to rainbow-hued sheets of figures there are restrictions to this method of illustration. Probably the most common way of using red ink in statistics is to denote decreases, deficits and credits. Columns ordinarily provided for increases, surpluses and debits must be used to show contra results and as the position of the figures ordinarily denotes a certain value the contrasting color is used to represent a different interpretation.

The accountant is guided to a great extent, in his compilation of statistics, and the manner of presenting them, by the wishes of his board of directors or executive officials. In addition to satisfying the requirements of government officials who exercise jurisdiction over the accounts, he endeavors to present

reports to his own officials in the manner most acceptable to them.

Some men find that figures answer every purpose and are more readily understood than charts or diagrams, while others, especially those with engineering experience, signify a preference for expressive curves.

Simple curves may be plotted to illustrate many phases of operation and traffic. A convenient form of paper to be used for the purpose is that which is ruled in squares, whose sides are one-tenth of an inch in length, and sometimes called "quadrille-ruled" paper. The size of the squares has little to do with the plotting of the curve but paper ruled in this manner is essential to rapid work.

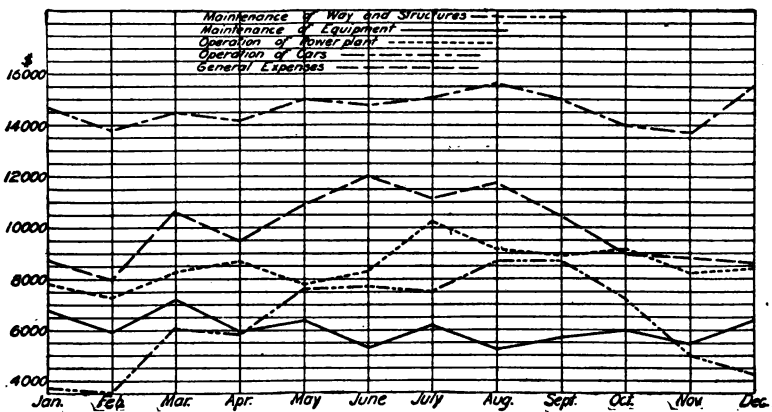


CHART 2.

When the paper is obtained or prepared, memorandum is made of the range of the statistics, both as to periods and amounts. Equal divisions of the sheet are allotted to each period of time represented, and the dividing lines are marked with the values they represent. A dot is then placed at each point indicating a change of direction in the proposed curve. After these dots have been connected by drawing straight lines between them, the resulting broken line or curve gives a graphic illustration of the idea to be conveyed.

Three charts have been prepared to illustrate a few of the uses to which the simple curves may be put. Chart number one is a statement of the yearly totals for a period of five years, of gross earnings, operating expenses, fixed charges, and surplus.

It will be noted that there is a regular increase in earnings, which is followed by an increase in operating expenses that is not so uniform. The increase in interest and taxes is very slight and is caused principally by an increased tax upon earnings. The surplus does not increase in the same amount as gross earnings for the reason that during part of the period under consideration, a large part of the increase was absorbed by operating expenses.

Chart number two represents the monthly changes in five general groups of operating expense accounts during the course of a year. The chart also shows at a glance the relative importance of each group. The peak of power plant operating expense appears quite prominently in July, caused by the heavy pull of cars moving excursion and holiday traffic. Maintenance of way and structures is carried on quite extensively during the

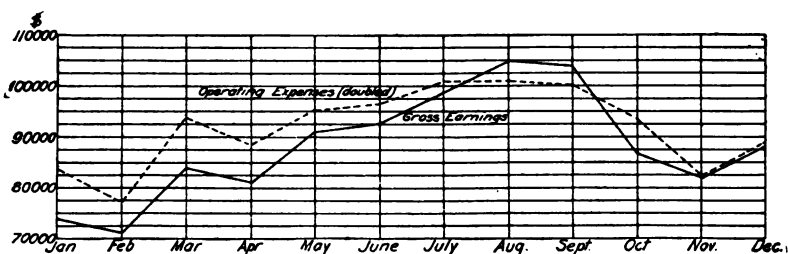


CHART 3.

good working months of summer and is at its minimum in mid-winter.

The third chart is used principally to illustrate the monthly changes in gross earnings. The insertion of the curve indicating the like changes in operating expenses is misleading until its object is explained. Operating executives are usually very much interested in the ratio that operating expenses bears to gross earnings. Frequently the general manager has in mind a ratio to which he has been accustomed, and desires to know each month how nearly the expenses approach it. For convenience the ratio of fifty percent. has been used in the chart illustrated. It may be set at sixty or any other figure that is desired. It will be noted that the operating expense curve keeps above the earnings curve until the months of heavy travel arrive when it drops below for a little while, to re-appear above as travel lightens or the expense proportionately increases.

CHAPTER XXIII.

RESERVES AND SINKING FUNDS.

One of the contingencies that is anticipated by electric railways is the payment of claims for damages to persons and property. Accidents which necessitate the expenditure of various sums in settlement of claims, occur without any regularity, and if these amounts are included in operating expenses as actually disbursed there will be a wide variation in the total operating expenses, and this variation will bear little relation to the volume of traffic or the amount of earnings.

Delay occurs in the settlement of damage claims, for different reasons. So many of the claims are unjust that time is required to separate the extortionate from legitimate demands. Sometimes the aid of the courts is invoked to decide cases, and this causes further delays.

It is not possible to determine the exact amount of the outstanding liability for unpaid claims, but an estimate of the amount payable should be shown, in order that the accounts may reflect true conditions. A common practice is to include each month in expenses, a fixed percentage of the total revenue, for damage claims. The amount is charged to the damages expense account and credited to an account called "Damages Reserve," or something similar. As claims are paid, the amounts are charged against the reserve; the unexpended balance is supposed to represent the liability for claims unsettled. It is usually found necessary to adjust the percentage from time to time, in order to keep the reserve at the proper figure.

In the same manner, some companies build up reserves for insurance against fire and other casualties. Instead of paying premiums to insurance companies, definite amounts are set aside out of earnings and invested in securities, the proceeds of which shall be available for replacements of property damaged by fire. The entire amount of insurance may not be so handled when this plan is first used, but the proportion of insurance written by insurance companies is gradually decreased as the reserve

is built up. As an illustration, we will say that a company which formerly paid \$1500 per month for insurance premiums, has built up a reserve which justifies it in carrying its own insurance, and it is doing so. Using the same amount, its monthly journal entry would appear thus:

| | |
|-----------------------|--------|
| Dr. Insurance Expense | \$1500 |
| Cr. Insurance Reserve | \$1500 |

During the month a small fire causes the expenditure of \$500 to replace the damaged property, and the remaining \$1000 is invested for the benefit of the fund. The following entry is then made:

| | |
|------------------------|--------|
| Dr. Insurance Reserve | \$500 |
| Dr. Securities in Fund | \$1000 |
| Cr. Cash | \$1500 |

After these entries have been made the books show a credit of \$1000 for contingent losses, and to offset it there are securities on hand valued at the same amount. The reserve fund is usually benefited to a considerable extent by turning into it the income received from securities in the fund.

A sinking fund provision in a mortgage usually provides that a certain amount shall be set aside annually or semi-annually, for payment of the mortgage bonds. This results in a gradual amortization if the bonds are retired, or in the accumulation of a fund which is to be eventually used for extinguishment of the debt. Its effect may be likened to the change in values which results when additions and betterments to property are made without increasing the capital liability. The sinking fund payments and the cost of additions and betterments may all be paid from current revenues if that is the financial policy of the company, but it does not necessarily follow that such charges are part of the income account.

There are instances, however, when payments to sinking funds become a charge against income. Some railway leases provide that the lessee company shall pay interest on bonds and make sinking fund payments for the leased line. If these are both considered as part of the rental cost, the sinking fund payments are accrued in the manner similar to bond interest, and grouped with other fixed charges.

CHAPTER XXIV.

CLASSIFICATION OF ACCOUNTS.

The principal reason that the ordinary railway balance-sheet shows so few accounts is the progress that has been made in the uniform grouping of various items. Years of experience have proven that multitudinous transactions may be classified under comparatively few headings, and much attention has been given, by experienced railway accountants, to the scientific arrangement of accounts.

The first concerted action by street and interurban railway accountants, towards securing a uniform classification, was taken at the organization meeting of the Street Railway Accountants Association which was held at Cleveland, Ohio, in March, 1897. At that meeting a committee was appointed to prepare a standard classification of accounts, and form of report. This committee, which was composed of street railway accountants, corresponded with the accounting officers of other American lines, and submitted a plan for a very comprehensive system of accounting, at the Association's convention held in the latter part of the year 1897.

The classification then provided, with some modifications, has since been very widely adopted. In addition to its use by the street and interurban railways of America, it has received the sanction of governmental bodies.

The National Association of Railroad Commissioners, at its convention at Denver, Colorado, in 1899, approved and recommended the use of the classification of operating accounts by the State Railroad Commissions; several States have since adopted it as standard and prescribed its use in making reports to the State. Among others, the States of New York, Massachusetts, Maine, Indiana, and Connecticut took this action.

When the United States Government prepared its 1902 Special Report on Street and Electric Railways, the Association classification was used in procuring the statistics from the street and interurban railways, and in making up the report.

The accounts used most extensively by operating electric railways are those comprised under the general title of "Operating Expenses." The Association classification, as originally adopted, groups all expenses of this character under five general headings, which are further subdivided into thirty-nine separate accounts. These accounts, which were designed to include all charges for operating expenses, have the following titles:

Maintenance of Way and Structures.—

1. Maintenance of track and roadway.
2. Maintenance of electric line.
3. Maintenance of buildings and fixtures.

Maintenance of Equipment.—

4. Maintenance of steam plant.
5. Maintenance of electric plant.
6. Maintenance of cars.
7. Maintenance of electric equipment of cars.
8. Maintenance of miscellaneous equipment.
9. Miscellaneous shop expenses.

Operation of Power Plant.—

10. Power Plant wages.
11. Fuel for power.
12. Water for power.
13. Lubricants and waste for Power Plant.
14. Miscellaneous supplies and expenses of Power Plant.
15. Hired power.

Operation of Cars.—

16. Superintendence of transportation.
17. Wages of conductors.
18. Wages of motormen.
19. Wages of miscellaneous car service employees.
20. Wages of car house employees.
21. Car service supplies.
22. Miscellaneous car service expenses.
- 22a Hired equipment
23. Cleaning and sanding track.
24. Removal of snow and ice.

General Expenses.—

25. Salaries of general officers.
26. Salaries of clerks.

27. Printing and stationery.
28. Miscellaneous office expenses.
29. Stores expenses.
30. Stable expenses.
31. Advertising and attractions.
32. Miscellaneous general expenses.
33. Damages.
34. Legal expenses in connection with damages.
35. Miscellaneous legal expenses.
36. Rent of land and buildings.
37. Rent of tracks and terminals.
38. Insurance.

The use of these accounts, and the others contained in its system of accounting, are more fully described in books issued by the American Street and Interurban Railway Accountants' Association, which is the outgrowth of the Street Railway Accountants' Association of America.

A valuable feature of any system of accounting is its adaptability to the making of comparisons. Not only is it desirable to compare the result secured by one railway during a certain period with that of another for the same period, but the results attained by one company are compared for a number of years in order to form opinions of its worth and earning capacity.

If the system of accounting changes from year to year it is necessary to make detail analyses of the accounts in order to compare the results. For this reason changes in an existing classification of accounts are not made without good reason and after careful consideration. It is thought better to suffer slight inconveniences caused, possibly, by changes in operating conditions, than to complicate the larger question, that of making intelligent comparisons.

The construction of interurban lines during the first decade of the twentieth century, and the linking of small properties into large systems has brought new problems to the electric railway accountants. It was found that the classification of accounts as originally provided, should be amplified in order to take care of the new items of expense introduced by the changed conditions. The Interstate Commerce Commission, also, had requested that the Accountants' Association recommend a system of accounting for the use of interstate electric carriers.

A revised classification of operating expenses was accordingly discussed at the American Street and Interurban Railway Accountants' Association's convention at Atlantic City, N. J., in October, 1907, but its official adoption was postponed, principally owing to the uncertainty regarding the action that would eventually be taken by the Interstate Commerce Commission.

In addition to classifying the operating expenses, electric railways group their other accounts in some uniform manner. The construction and equipment group is mentioned in another chapter.

The accounts representing assets are classified as property accounts and current accounts; liabilities are shown as capital liabilities, current liabilities, and accrued liabilities. The sinking funds, reserves and miscellaneous accounts sometimes form other, smaller groups.

The earnings from operation are generally shown separately under the following headings:

Passengers.

Chartered Cars.

Freight.

Mail.

Express.

Other earnings such as advertising and sale of power are also shown, and the list of accounts usually includes some miscellaneous earnings, which are shown more or less in detail, as their importance warrants.

The freight business is a feature of electric railway transportation that is comparatively new, having developed with the construction of interurban lines. Consequently, railway operators are very much interested in securing statements showing the results derived from this business.

It is a comparatively simple matter to ascertain the earnings derived from freight and express, but when the task of segregating the items of expense incurred thereby, is undertaken, many difficulties are encountered. There are some classes of expense that separate themselves quite readily. It is not a hard matter to determine how much of trainmen's wages should be charged to the operation of exclusively freight cars. The salaries of exclusively freight agents and certain other expenses may be cal-

culated with exactness, but these constitute only a small part of the whole.

It is of prime importance to decide upon a definite plan of calculating this expense, and then to adhere to it closely, in order to get accurate results when making comparisons.

The following method has been utilized by companies interested in ascertaining the cost of handling freight and express traffic.

Exact costs are not secured thereby, but as it is impossible to state with accuracy the proportion of each item of expense of the railway as a whole that has been incurred in handling freight, this plan is one of the most satisfactory that can be used.

Separate accounts are opened for expense of handling freight and express, these accounts being subdivisions of the ordinary expense accounts. The expense that is incurred directly by this traffic, and which may be ascertained with exactness, is charged to the proper sub-account, from the voucher, pay-roll or other source.

An estimated amount is then charged to each sub-account for those charges that cannot be made with exactness. The estimate is based upon the proportion that freight and express mileage and revenue bear to the total.

The charges to the accounts comprised in the Maintenance and Operating groups, for the freight and express proportion of total operating expenses, are made by taking the percentage that the mileage made by cars in this service bears to the total car mileage. The problem will be complicated if the freight and express are carried in cars with passengers; the plan then used will depend upon local conditions.

The charges to the General Expense group of accounts, for freight and express traffic, are made by using as a basis the relation between the revenue derived from freight and express and the total operating revenue of the railway.

This method has the advantage of including a part of each operating expense account; the percentage secured will be an equitable one in many cases, and if used in lieu of an arbitrary charge per car or train mile, it will be found in many respects more satisfactory.

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